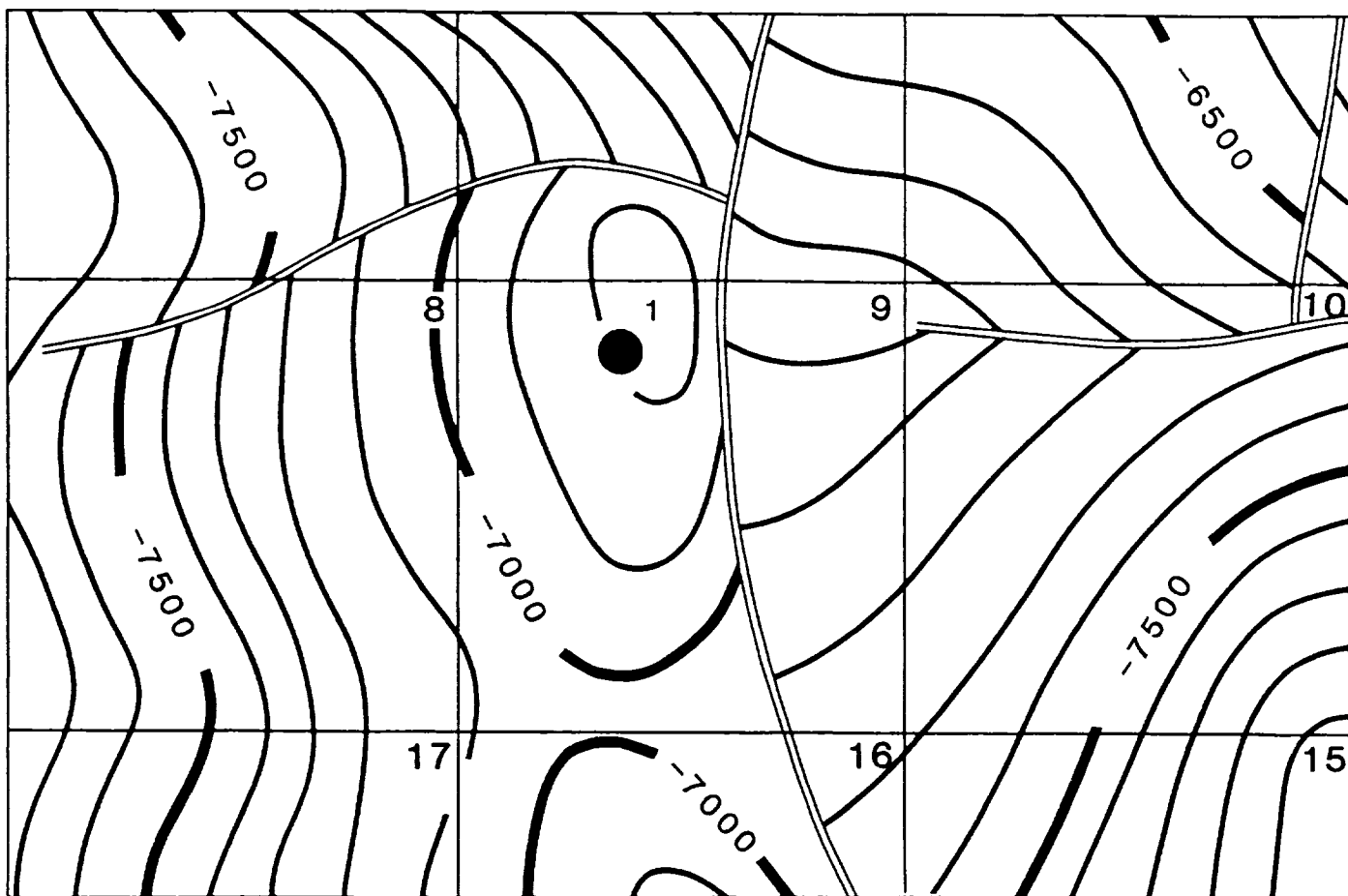




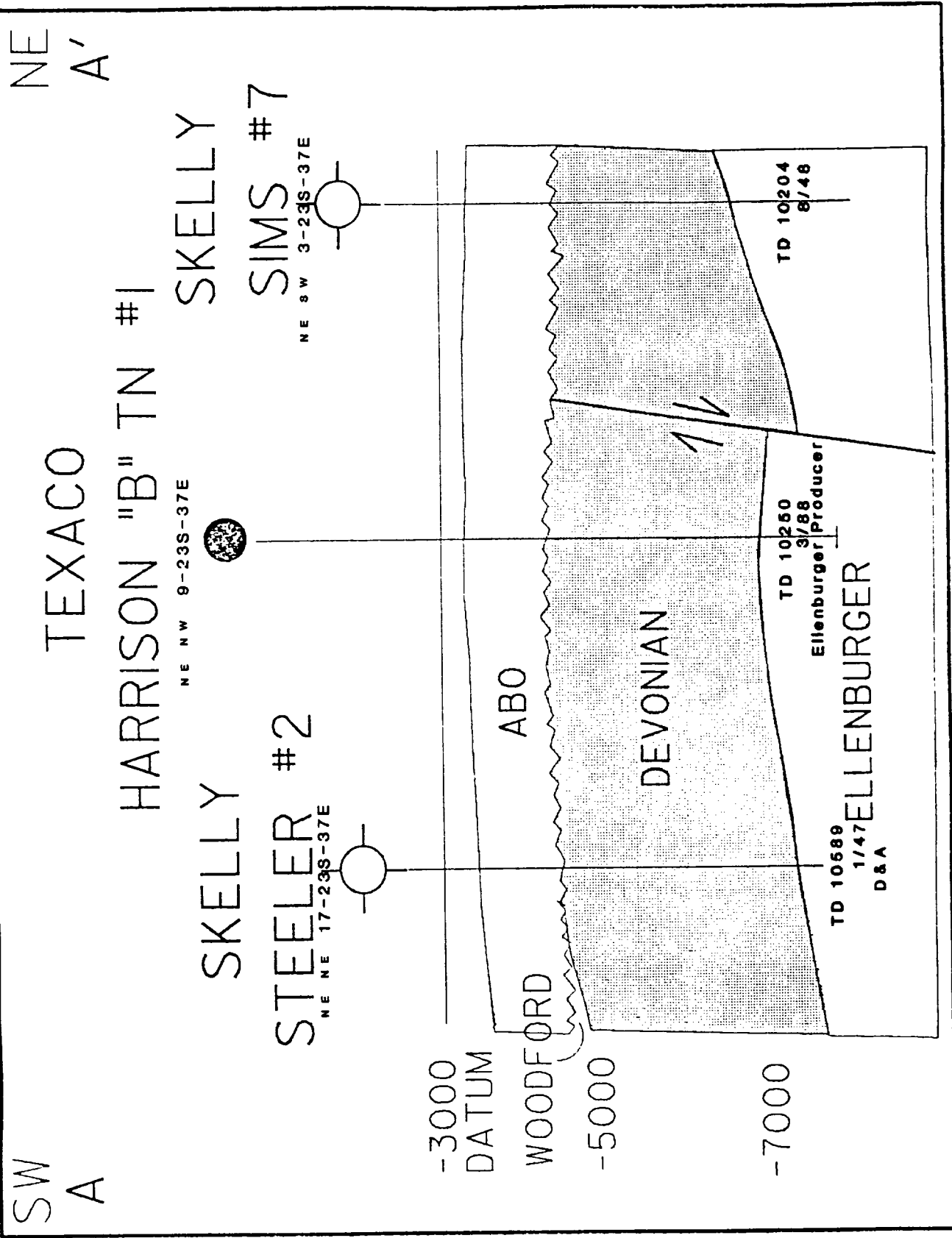
ATTACHMENT TO FORM C-109

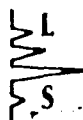
ELLENBURGER FORMATION STRUCTURE MAP
LANGLEY-MATTIX FIELD AREA

DISCOVERY WELL:

B.F. HARRISON "B" TN NO.1
NE NW SECTION 9- T23S-R37E
LEA COUNTY, NEW MEXICO
SCALE: 1":2000'

ATTACHMENT TO FORM C-109





LABORATORY SERVICES

1331 Tasker Drive
Hobbs, New Mexico 88240

Telephone: 505-397-3713

FOR: B & D Well Testing
Hobbs N. M..

SAMPLE IDENTIFICATION: Texico B. ^F. Harrison
COMPANY: Texico Inc. ^{B&D} #1
LEASE:
PLANT: ^{TN}

SAMPLE DATA: DATE SAMPLED: 3/27/88 10AM GAS (X) LIQUID ()
 ANALYSIS DATE: 3/28/88 SAMPLED BY: Dee Kinman
 PRESSURE — PSIG: 135 ANALYSIS BY: R. W. Perry
 TEMPERATURE — °F:

REMARKS:

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM	LIQ. VOL. PERCENT
Hydrogen Sulfide	(H2S)	-		
Nitrogen	(N2)	4.33		
Carbon Dioxide	(CO2)	0.33		
Methane	(C1)	65.66		
Ethane	(C2)	16.60	4.235	
Propane	(C3)	9.16	2.524	
I-Butane	(IC4)	0.44	0.144	
N-Butane	(NC4)	2.06	0.650	
I-Pentane	(IC5)	0.21	0.077	
N-Pentane	(NC5)	0.57	0.207	
Hexane	(C6)	0.37	0.171	
Heptanes Plus	(C7+)	0.27	0.151	
		100.00	8.159	

BTU/CU. FT. — DRY 1333
 WET 1310

SPECIFIC GRAVITY — CALCULATED 0.812
 MEASURED

VAPOR PRESSURE (ABSOLUTE) — CALCULATED

26# GASOLINE — 0.834

CU. FT./GAL. —

JOB NUMBER: 6067

TESTING SERVICES PROVIDED BY HOBBS NEW MEXICO

***** TRA - TESTING & RESERVOIR ANALYSIS *****
WELL TESTING SERVICES

CUSTOMER: TEXACO PRODUCING INC	INSTRUMENT TYPE: AMERADA
WELL NAME: HARRISON B-TN#1	INSTRUMENT #: 47721
FIELD: EUNICE	PRESSURE RANGE: 0-5000 PSI
COUNTY/STATE: LEA/N.M.	CALIBRATION DATE: 12 OCT 88
DATE OF TEST: 27-28 MAR 88	CLOCK RANGE: 24 HRS
TYPE SURVEY: BUILDUP	TANDEM GAUGES: YES
PERFORATIONS: ----	TBG SIZE: ----
TOOL ZEROED: ----	TREE CONNECTION: ----
SURF PRESS: ----	ELEVATION: ----
MEANS OF HANGING: ----	GAUGE DATUM: ----
CSG PRESS: ----	SLANT HOLE: ----

BOTTOM HOLE PRESSURE TECHNICIAN: MARTIN

PT #	YR	MO	DA	HR	MI	SE	DTIME(Hrs)	PRESS(Psig)	REMARK
1	88	3	27	11	30	0	0.00	250.20	IN LUBRICATOR ON BOTTOM
2	88	3	27	12	0	0	0.00	2374.40	
3	88	3	27	12	5	0	.08	2382.90	
4	88	3	27	12	10	0	.17	2382.90	
5	88	3	27	12	15	0	.25	2382.90	
6	88	3	27	12	20	0	.33	2382.90	
7	88	3	27	12	25	0	.42	2389.30	
8	88	3	27	12	30	0	.50	2389.30	
9	88	3	27	12	35	0	.58	2389.30	
10	88	3	27	12	40	0	.67	2389.30	
11	88	3	27	12	45	0	.75	2389.30	
12	88	3	27	12	50	0	.83	2389.30	
13	88	3	27	12	55	0	.92	2387.20	
14	88	3	27	13	0	0	1.00	2389.30	
15	88	3	27	13	5	0	1.08	2385.10	
16	88	3	27	13	10	0	1.17	2387.20	
17	88	3	27	13	15	0	1.25	2389.30	
18	88	3	27	13	20	0	1.33	2389.30	
19	88	3	27	13	25	0	1.42	2389.30	
20	88	3	27	13	30	0	1.50	2389.30	
21	88	3	27	13	35	0	1.58	2387.20	
22	88	3	27	13	40	0	1.67	2387.20	
23	88	3	27	13	45	0	1.75	2387.20	
24	88	3	27	13	50	0	1.83	2387.20	
25	88	3	27	13	55	0	1.92	2387.20	
26	88	3	27	14	0	0	2.00	2387.20	
27	88	3	27	14	30	0	2.50	2387.20	
28	88	3	27	15	0	0	3.00	2385.10	
29	88	3	27	15	30	0	3.50	2410.70	
30	88	3	27	16	0	0	4.00	2414.90	

Customer: TEXACO PRODUCING INC
Well Name: HARRISON B-TN#1
Test Date: 27-28 MAR 88
Perforations: ----

Page: 2

PT #	YR	MO	DA	HR	MI	SE	DTIME(Hrs)	PRESS(Psig)	REMARK
31	88	3	27	16	30	0	4.50	2414.90	
32	88	3	27	17	0	0	5.00	2419.20	
33	88	3	27	17	30	0	5.50	2419.20	
34	88	3	27	18	0	0	6.00	2417.10	
35	88	3	27	19	0	0	7.00	2417.10	
36	88	3	27	20	0	0	8.00	2417.10	
37	88	3	27	21	0	0	9.00	2419.20	
38	88	3	27	22	0	0	10.00	2417.10	
39	88	3	27	23	0	0	11.00	2417.10	
40	88	3	28	0	0	0	12.00	2419.20	
41	88	3	28	1	0	0	13.00	2417.10	
42	88	3	28	2	0	0	14.00	2419.20	
43	88	3	28	3	0	0	15.00	2419.20	
44	88	3	28	4	0	0	16.00	2419.20	
45	88	3	28	5	0	0	17.00	2419.20	
46	88	3	28	6	0	0	18.00	2419.20	
47	88	3	28	7	0	0	19.00	2419.20	
48	88	3	28	8	0	0	20.00	2417.10	
49	88	3	28	9	0	0	21.00	2419.20	
50	88	3	28	10	0	0	22.00	2419.20	
51	88	3	28	11	0	0	23.00	2419.20	
52	88	3	28	12	0	0	24.00	2419.20	

JOB NUMBER: 6067

TESTING SERVICES PROVIDED BY HOBBS NEW MEXICO

***** TRA - TESTING & RESERVOIR ANALYSIS *****
WELL TESTING SERVICES

CUSTOMER: TEXACO PRODUCING INC	INSTRUMENT TYPE: AMERADA
WELL NAME: HARRISON B-TN#1	INSTRUMENT #: 45878
FIELD: EUNICE	PRESSURE RANGE: 0-5000 PSI
COUNTY/STATE: LEA/N. M.	CALIBRATION DATE: 12 OCT 88
DATE OF TEST: 27-28 MAR 88	CLOCK RANGE: 72 HRS
TYPE SURVEY: BUILDUP	TANDEM GAUGES: YES
PERFORATIONS: ----	TBG SIZE: ----
TOOL ZEROED: ----	TREE CONNECTION: ----
SURF PRESS: ----	ELEVATION: ----
MEANS OF HANGING: ----	GAUGE DATUM: ----
CSG PRESS: ----	SLANT HOLE: ----

BOTTOM HOLE PRESSURE TECHNICIAN: MARTIN

PT #	YR MO DA HR MI SE	DTIME(Hrs)	PRESS(Psig)	REMARK
1	88 3 27 12 0 0	0.00	2534.80	ON BOTTOM
2	88 3 27 12 30 0	.50	2534.80	
3	88 3 27 13 0 0	1.00	2534.80	
4	88 3 27 13 30 0	1.50	2437.30	
5	88 3 27 14 0 0	2.00	2450.10	
6	88 3 27 14 30 0	2.50	2450.10	
7	88 3 27 15 0 0	3.00	2450.10	
8	88 3 27 15 30 0	3.50	2450.10	
9	88 3 27 16 30 0	4.50	2450.10	
10	88 3 27 17 30 0	5.50	2450.10	
11	88 3 27 18 30 0	6.50	2450.10	
12	88 3 27 19 30 0	7.50	2450.10	
13	88 3 27 20 30 0	8.50	2450.10	
14	88 3 27 21 30 0	9.50	2450.10	
15	88 3 27 22 30 0	10.50	2450.10	
16	88 3 27 23 30 0	11.50	2450.10	
17	88 3 28 0 30 0	12.50	2450.10	
18	88 3 28 2 30 0	14.50	2450.10	
19	88 3 28 4 30 0	16.50	2450.10	
20	88 3 28 6 30 0	18.50	2450.10	
21	88 3 28 8 30 0	20.50	2450.10	
22	88 3 28 10 30 0	22.50	2450.10	
23	88 3 28 12 30 0	24.50	2450.10	
24	88 3 28 14 30 0	26.50	2450.10	
25	88 3 28 16 30 0	28.50	2450.10	
26	88 3 28 18 30 0	30.50	2450.10	
27	88 3 28 20 30 0	32.50	2450.10	
28	88 3 28 22 30 0	34.50	2450.10	
29	88 3 29 0 30 0	36.50	2450.10	
30	88 3 29 2 30 0	38.50	2450.10	

Customer: TEXACO PRODUCING INC
Well Name: HARRISON B-TN#1
Test Date: 27-28 MAR 88
Perforations: ----

Page: 2

PT #	YR	MO	DA	HR	MI	SE	DTIME(Hrs)	PRESS(Psig)	REMARK
31	88	3	29	4	30	0	40.50	2450.10	
32	88	3	29	6	30	0	42.50	2450.10	
33	88	3	29	8	30	0	44.50	2450.10	
34	88	3	29	10	30	0	46.50	2450.10	
35	88	3	29	12	30	0	48.50	2450.10	
36	88	3	29	14	30	0	50.50	2450.10	
37	88	3	29	16	30	0	52.50	2450.10	
38	88	3	29	18	30	0	54.50	2450.10	
39	88	3	29	20	30	0	56.50	2450.10	
40	88	3	29	22	30	0	58.50	2450.10	
41	88	3	30	0	30	0	60.50	2450.10	
42	88	3	30	4	30	0	64.50	2450.10	
43	88	3	30	6	30	0	66.50	2450.10	
44	88	3	30	8	30	0	68.50	2450.10	
45	88	3	30	10	30	0	70.50	2450.10	
46	88	3	30	12	30	0	72.50	2450.10	

Kwik-Data Service Report

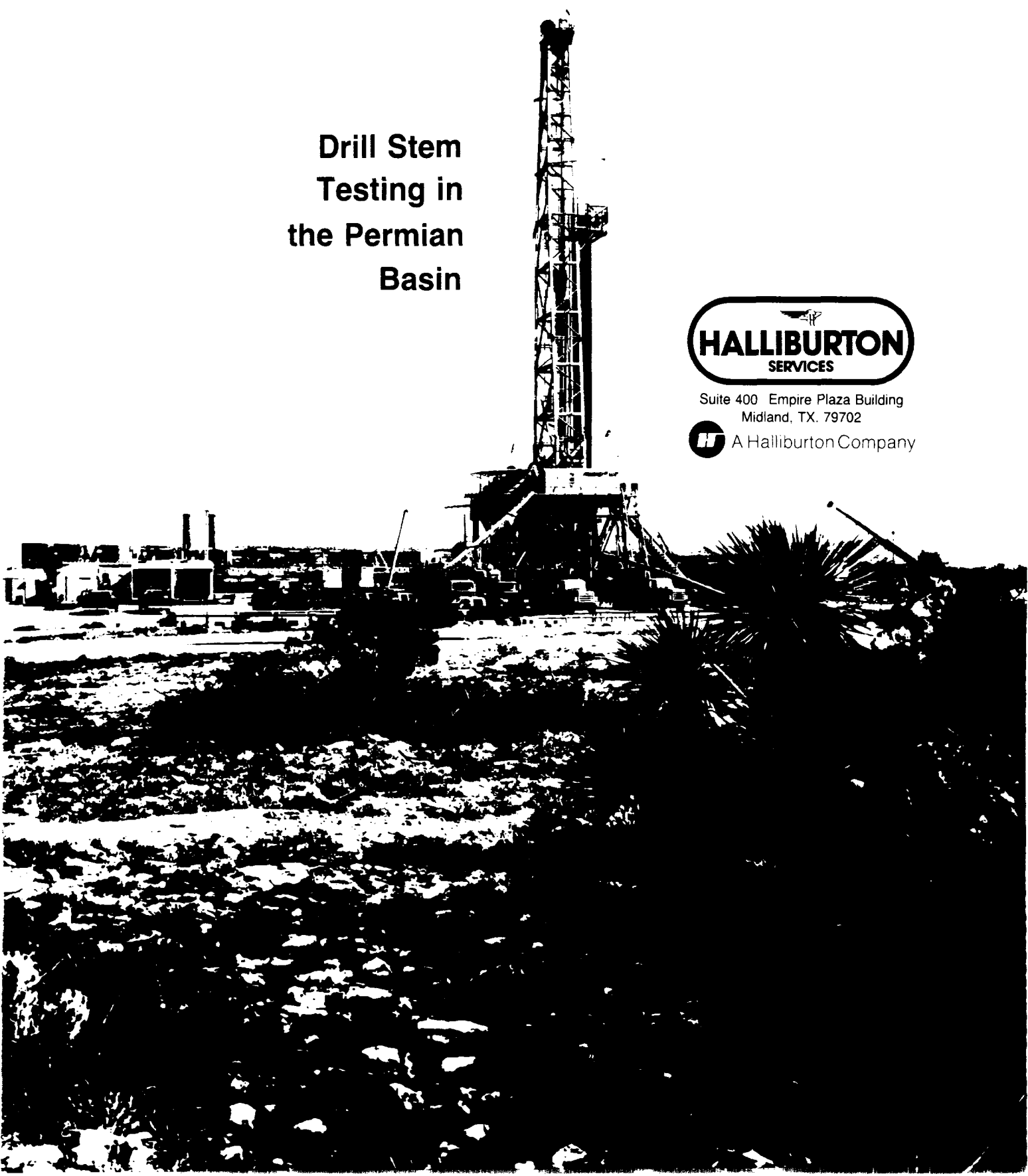
Drill Stem
Testing in
the Permian
Basin



Suite 400 Empire Plaza Building
Midland, TX. 79702



A Halliburton Company



NOMENCLATURE

B	=	Formation Volume Factor (Res Vol / Std Vol)	—
C _t	=	System Total Compressibility	(Vol / Vol) / psi
DR	=	Damage Ratio	—
h	=	Estimated Net Pay Thickness	Ft
k	=	Permeability	md
m	{	(Liquid) Slope Extrapolated Pressure Plot	psi/cycle
		(Gas) Slope Extrapolated m(P) Plot	MM psi ² /cp/cycle
m(P*)	=	Real Gas Potential at P*	MM psi ² /cp
m(P _f)	=	Real Gas Potential at P _f	MM psi ² /cp
AOF ₁	=	Maximum Indicated Absolute Open Flow at Test Conditions	MCFD
AOF ₂	=	Minimum Indicated Absolute Open Flow at Test Conditions	MCFD
P*	=	Extrapolated Static Pressure	Psig
P _f	=	Final Flow Pressure	Psig
Q	=	Liquid Production Rate During Test	BPD
Q ₁	=	Theoretical Liquid Production w/ Damage Removed	BPD
Q _g	=	Measured Gas Production Rate	MCFD
r _i	=	Approximate Radius of Investigation	Ft
r _w	=	Radius of Well Bore	Ft
S	=	Skin Factor	
t	=	Total Flow Time Previous to Closed-in	Minutes
Δt	=	Closed-in Time at Data Point	Minutes
T	=	Temperature Rankine	°R
φ	=	Porosity	—
μ	=	Viscosity of Gas or Liquid	cp
Log	=	Common Log	

THIS REPORT IS BASED ON SOUND ENGINEERING PRACTICES. BUT BECAUSE OF VARIABLE WELL CONDITIONS AND OTHER INFORMATION WHICH MUST BE RELIED UPON HALLIBURTON MAKES NO WARRANTY, EXPRESS OR IMPLIED. AS TO THE ACCURACY OF THE DATA OR ANY CALCULATIONS OR OPINIONS EXPRESSED HEREIN. YOU AGREE THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER DUE TO NEGLIGENCE OR OTHERWISE, ARISING OUT OF OR IN CONNECTION WITH SUCH DATA, CALCULATIONS, OR OPINIONS.

EQUATIONS FOR DST LIQUID WELL ANALYSIS

Transmissibility	$\frac{kh}{\mu} = \frac{162.6 \text{ QB}}{m}$	$\frac{\text{md-ft}}{\text{cp}}$
Indicated Flow Capacity	$kh = \frac{kh}{\mu} \mu$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Damage Ratio	$DR = .183 \frac{P^* - P_f}{m}$	—
Theoretical Potential w/ Damage Removed	$Q_1 = Q \text{ DR}$	BPD
Approx. Radius of Investigation	$r = 4.63 \sqrt{kt}$	ft

EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow Capacity	$kh = \frac{.001637 \text{ Q}_g \text{ T}}{m}$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151 \left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG} \frac{k(t/60)}{\phi \mu c_t r_w^2} - 3.23 \right]$	—
Damage Ratio	$DR = \frac{m(P^*) - m(P_f)}{m(P^*) - m(P_f) - 0.87 \text{ mS}}$	—
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	$r_i = 0.032 \sqrt{\frac{k(t/60)}{\phi \mu c_t}}$	ft

CHARTS LEFT RIG : 1:AM 3-4-88

REC: 7:AM 3-4-88

HALLIBURTON SERVICES

FORMATION TESTING SERVICE REPORT

04-MAR-88

COMPANY NAME: TEXACO

DRILLING CONTRACTOR: BASIN DRILLING #14

TICKET NUMBER: 54777201
TEST DATE: 3-2-88

LEASE NAME: B. F. HARRISON RIN
WELL NUMBER: 1
TEST NUMBER: 4

JOB TYPE: OPEN HOLE
LEGAL LOCATION: SEC 9, 23S, 37E
COUNTY: LEA
STATE: NEW MEXICO

HALLIBURTON CAMP: HOBBS
FIELD AREA: SOUTHEAST EUNICE

ELEVATION: 3314.0 FEET
NET PAY: 18.0 FEET
HOLE SIZE: 6.1 INCH(ES)
TESTED INTERVAL: 10151.0 FEET - 10250.0 FEET

NOTICE:

THESE CALCULATIONS ARE BASED UPON INFORMATION FURNISHED BY YOU AND TAKEN FROM DRILL STEM TEST PRESSURE CHARTS, AND ARE FURNISHED YOU FOR YOUR INFORMATION. IN FURNISHING SUCH CALCULATIONS AND EVALUATIONS BASED THEREON, HALLIBURTON IS MERELY EXPRESSING ITS OPINION. YOU AGREE THAT HALLIBURTON MAKES NO WARRANTY EXPRESS OR IMPLIED AS TO THE ACCURACY OF SUCH CALCULATIONS OR OPINIONS, AND THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER DUE TO NEGLIGENCE OR OTHERWISE, IN CONNECTION WITH SUCH CALCULATIONS AND OPINIONS.

08Y628

1

RECEIVED

MAY 6 1988

OCD
HOBBS OFFICE

TICKET NUMBER: 54777501
TEST DATE: 3-2-88

EQUIPMENT & HOLE DATA

FORMATION TESTED: ELLENBURGER
NET PAY: 18.0 FT.
GROSS TESTED FOOTAGE: 99.0 FT.
ALL DEPTHS MEASURED FROM: KELLY BUSHING
CASING PERFORATIONS:
HOLE/CASING SIZE: 6.1 IN.
ELEVATION: 3314.0 FT.
TOTAL DEPTH: 10250.0 FT.
PACKER DEPTH(S): 10146.0 FT.
10151.0 FT.
FINAL SURFACE CHOKE: 0.25000 IN.
BOTTOM HOLE CHOKE: 0.500 IN.
MUD WEIGHT: 9.00 LB/GAL
MUD VISCOSITY: 34.00 SEC.
ESTIMATED HOLE TEMPERATURE: 0.0 F
ACTUAL HOLE TEMPERATURE: 138.0 F @ 10246.0 FT.

HYDROCARBON PROPERTIES

OIL GRAVITY: 50.0 API @ 60.0 F
GAS/OIL RATIO: 390.0 CU.FT./BBL
GAS GRAVITY:

SAMPLER DATA

SURFACE PRESSURE: 1275.0 PSIG
GAS VOLUME: 3.44 CU.FT.
OIL VOLUME: 1400.0 CC
WATER VOLUME:
MUD VOLUME:
TOTAL LIQUID VOLUME: 1400.0 CC

TESTER(S):

HERB SMITH
STEVE LUSCOMBE

WITNESS(ES):

GAYLON WEIR

RECEIVED
MARCH 10 1988
HOBBS OFFICE

RECEIVED

MAY 6 1988

OCD
HOBBS OFFICE

TICKET NUMBER: 61777501
TEST DATE: 3-1-88

FLUID PROPERTIES FOR RECOVERED MUD AND WATER

SOURCE	RESISTIVITY		CHLORIDES
MUD PIT	0.740 @	34.0 F	4970.0 PPM
FLUID CHANGE #1	1.220 @	34.0 F	2000.0 PPM
	0.000 @	0.0 F	0.0 PPM
	0.000 @	0.0 F	0.0 PPM
	0.000 @	0.0 F	0.0 PPM
	0.000 @	0.0 F	0.0 PPM

CUSHION EPD

TYPE	AMOUNT	WEIGHT
FRESH WATER (FT)	2696.0	8.33
	0.0	0.00

RECOVERED (MEASURED FROM TESTER VALVE):

3638 FEET OF OIL AND WATER

REMARKS:

FLUID CHANGE #1, OIL, API 48 @ 60 DEG. F.
OIL BELOW CIP VALVE, API 50 @ 60 DEG. F.
SAMPLER WAS ALL OIL, API 50 @ 60 DEG. F.

61777501
3-1-88
3638
3638

RECEIVED
MAY 6 1988
OCD
HOBBS OFFICE

HALLIBURTON SERVICES

TICKET NUMBER: 54777501

TEST DATE: 3-2-86

CLOCK NUMBER: 7275

HOUR: 24

GAUGE NUMBER: 5619

GAUGE DEPTH: 10132.0

REFERENCE	TIME (MINUTES)	PRESSURE (PSI)	DP	(T+DT) ----- (T+DT)	(T+DT) LOG----- DT
-----------	-------------------	-------------------	----	---------------------------	--------------------------

FIRST FLOW

B	1	0.0	2074.6		
C	2	26.5	2469.5	394.9	

FIRST CLOSED-IN

C	1	0.0	2469.5			
	2	3.0	2476.4	6.9	2.7	0.993
	3	4.0	2477.2	7.8	3.5	0.883
	4	5.0	2478.0	8.5	4.2	0.800
	5	6.0	2478.6	9.1	4.9	0.734
	6	7.0	2479.1	9.6	5.5	0.680
	7	8.0	2479.7	10.1	6.1	0.635
	8	9.0	2480.2	10.7	6.7	0.596
	9	10.0	2480.4	10.9	7.3	0.563
	10	12.0	2480.5	11.0	8.3	0.507
	11	14.0	2480.6	11.1	9.2	0.462
	12	16.0	2480.8	11.3	10.0	0.425
	13	19.0	2480.9	11.4	10.7	0.393
	14	20.0	2481.1	11.5	11.4	0.367
	15	22.0	2481.2	11.7	12.0	0.344
	16	24.0	2481.3	11.8	12.6	0.323
	17	26.0	2481.5	12.0	13.1	0.305
	18	28.0	2481.6	12.1	13.6	0.290
	19	30.0	2481.7	12.2	14.1	0.275
	20	35.0	2482.0	12.5	15.1	0.245
	21	40.0	2482.2	12.6	16.0	0.221
	22	45.0	2482.3	12.8	16.7	0.201
	23	50.0	2482.5	12.9	17.3	0.185
D	24	53.1	2488.0	18.5	18.0	0.168

SECOND FLOW

E	1	0.0	2457.5	
	2	12.0	2457.9	0.4
	3	15.0	2458.1	0.2
	4	18.0	2459.1	1.0
	5	21.0	2460.2	1.0
	6	24.0	2461.2	1.0
	7	27.0	2462.3	1.0
	8	30.0	2463.3	1.0
	9	33.0	2464.1	0.8

RE-TEST
APP
HOD
30750 2400H

RECEIVED
MAY 6 1988
OCD
HOBBS OFFICE

HALLIBURTON SERVICES

TICKET NUMBER: 54777501

TEST DATE: 3-2-88

CLOCK NUMBER: 7275

HOUR: 24

GAUGE NUMBER: 5419

GAUGE DEPTH: 10132.0

REFERENCE	TIME (MINUTES)	PRESSURE (PSI)	DP	(T+DT) ----- (T+DT)	(T+DT) LOG----- DT
	10	2464.9	0.8		
	11	2465.8	0.8		
	12	2466.6	0.8		
	13	2467.4	0.8		
	14	2468.2	0.7		
	15	2468.9	0.7		
	16	2469.6	0.7		
	17	2470.3	0.7		
	18	2471.1	0.7		
F	19	2476.4	5.3		

SECOND CLOSED-IN

F	1	0.0	2476.4			
	2	1.0	2480.0	3.6	1.0	1.962
	3	2.0	2480.1	3.7	2.0	1.666
	4	3.0	2480.2	3.9	2.9	1.494
	5	4.0	2480.4	4.0	3.8	1.374
	6	5.0	2480.5	4.2	4.7	1.282
	7	6.0	2480.7	4.3	5.6	1.207
	8	7.0	2480.8	4.5	6.5	1.145
	9	8.0	2481.0	4.6	7.4	1.091
	10	9.0	2481.1	4.8	8.2	1.044
	11	10.0	2481.3	4.9	9.0	1.003
	12	12.0	2481.6	5.2	10.6	0.932
	13	14.0	2481.9	5.5	12.1	0.874
	14	16.0	2481.9	5.6	13.6	0.824
	15	18.0	2481.9	5.6	15.0	0.781
	16	20.0	2481.9	5.6	16.4	0.743
	17	22.0	2481.9	5.6	17.7	0.709
	18	24.0	2481.9	5.6	19.0	0.679
	19	26.0	2481.9	5.6	20.2	0.652
	20	28.0	2481.9	5.6	21.4	0.627
	21	30.0	2481.9	5.6	22.5	0.604
	22	35.0	2481.9	5.6	25.3	0.555
	23	40.0	2481.9	5.6	27.8	0.514
	24	45.0	2481.9	5.6	30.1	0.479
	25	50.0	2481.9	5.6	32.2	0.449
	26	55.0	2481.9	5.6	34.2	0.423
	27	60.0	2481.9	5.6	36.1	0.400
	28	70.0	2481.9	5.6	39.5	0.361
	29	80.0	2481.9	5.6	42.5	0.329
	30	90.0	2482.0	5.6	45.2	0.303

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HALLIBURTON SERVICES

TICKET NUMBER: 54777501
 TEST DATE: 3-2-88
 CLOCK NUMBER: 7275
 HOUR: 24
 GADGE NUMBER: 5619
 GAUGE DEPTH: 10132.0

REFERENCE	TIME (MINUTES)	PRESSURE (PSI)	DP	(T+DT) ----- (T+DT)	(T+DT) LOG----- DT
31	100.0	2482.1	5.7	47.5	0.290
32	110.0	2482.1	5.8	49.7	0.261
33	120.0	2482.2	5.9	51.6	0.244
34	135.0	2482.4	6.0	54.2	0.223
35	150.0	2482.4	6.0	56.5	0.205
36	165.0	2482.2	5.9	58.5	0.190
37	180.0	2482.1	5.7	60.3	0.177
38	195.0	2664.4	188.0	61.9	0.166
39	195.2	2481.7	5.3	61.9	0.166

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HALLIBURTON SERVICES

TITLE NUMBER: 34777501
 TEST DATE: 3-2-88
 CLOCK NUMBER: 5937
 HOUR: 24
 GAUGE NUMBER: 5618
 GAUGE DEPTH: 10247.0

REFERENCE	TIME (MINUTES)	PRESSURE (PSI)	DP	(T+DT) ----- (T+DT)	(T+DT) LOG----- DT
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FIRST FLOW

1	0.0	2163.0	
2	7.0	2219.7	56.7
3	8.0	2219.7	0.0
4	9.0	2243.4	23.7
5	10.0	2246.4	3.0
6	11.0	2248.9	22.5
7	12.0	2273.1	4.1
8	13.0	2276.9	3.8
9	14.0	2281.4	4.5
10	15.0	2250.6	9.2
11	16.0	2308.4	17.8
12	17.0	2314.9	6.5
13	18.0	2322.7	7.8
14	19.0	2320.0	7.3
15	20.0	2332.5	2.5
16	21.0	2344.3	11.7
17	22.0	2351.0	6.7
18	23.0	2354.9	3.9
19	24.0	2361.8	6.9
20	25.0	2378.1	16.3
21	26.0	2396.3	18.2
22	26.5	2408.3	12.5

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FIRST CLOSED-IN

1	0.0	2408.8			
2	1.0	2464.7	55.9	1.0	1.440
3	2.0	2490.9	82.1	1.9	1.154
4	3.0	2496.9	58.0	2.7	0.993
5	4.0	2502.3	94.0	3.5	0.883
6	5.0	2504.3	95.5	4.2	0.800
7	6.0	2505.1	96.3	4.9	0.734
8	7.0	2505.9	97.1	5.5	0.680
9	8.0	2506.7	97.9	6.1	0.635
10	9.0	2507.6	98.7	6.7	0.596
11	10.0	2508.4	99.5	7.3	0.563
12	12.0	2510.0	101.1	8.3	0.507
13	14.0	2511.2	102.4	9.2	0.462
14	16.0	2518.7	109.8	10.0	0.425
15	18.0	2519.8	111.0	10.7	0.393

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TICKET NUMBER: 54777501
TEST DATE: 3-2-98

CLOCK NUMBER: 5937
HOUR: 24

GAUGE NUMBER: 5618
GAUGE DEPTH: 10247.0

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REFERENCE	TIME (MINUTES)	PRESSURE (PSI)	DP	(T+DT) ----- (T+DT)	(T+DT) LOG----- DT
	16	2519.8	111.0	11.4	0.367
	17	2519.4	110.6	12.0	0.344
	18	2519.3	110.4	12.6	0.323
	19	2514.0	105.2	13.1	0.305
	20	2511.1	102.3	13.6	0.290
	21	2511.1	102.2	14.1	0.275
	22	2511.0	102.1	15.1	0.245
	23	2510.8	102.0	16.0	0.221
	24	2510.7	101.9	16.7	0.201
D	25	2511.9	103.1	18.0	0.168

E	1	0.0	2407.5	
	2	3.0	2474.8	69.3
	3	6.0	2485.9	9.1
	4	9.0	2491.8	5.9
	5	12.0	2498.7	6.9
	6	15.0	2499.8	1.2
	7	18.0	2499.8	0.0
	8	21.0	2499.8	0.0
	9	24.0	2499.4	-0.4
	10	27.0	2499.3	-0.1
	11	30.0	2499.3	0.0
	12	33.0	2499.3	0.0
	13	36.0	2498.9	-0.4
	14	39.0	2498.8	-0.1
	15	42.0	2498.8	0.0
	16	45.0	2498.8	0.0
	17	48.0	2504.8	6.0
	18	51.0	2506.9	2.1
	19	54.0	2506.9	0.0
	20	57.0	2506.9	0.0
	21	60.0	2506.5	-0.4
F	22	64.1	2499.3	-7.2

F	1	0.0	2499.3			
	2	1.0	2516.4	17.1	1.0	1.962
	3	2.0	2515.0	15.6	2.0	1.666
	4	3.0	2515.0	15.6	2.9	1.494
	5	4.0	2515.7	16.4	3.8	1.374
	6	5.0	2519.4	20.0	4.7	1.282

HALLIBURTON SERVICES

TICKET NUMBER: 54777501

TEST DATE: 3-2-88

CLOCK NUMBER: 5937

HOUR: 24

GAUGE NUMBER: 5418

GAUGE DEPTH: 10247.0

REFERENCE	TIME (MINUTES)	PRESSURE (PSI)	DP	(T*DT) ----- (T+DT)	(T+DT) LOG----- DT
7	6.0	2523.0	23.7	5.6	1.207
8	7.0	2523.4	24.1	6.5	1.145
9	8.0	2523.2	23.9	7.4	1.091
10	9.0	2521.4	22.1	8.2	1.044
11	10.0	2517.7	18.4	9.0	1.003
12	12.0	2514.4	15.1	10.6	0.932
13	14.0	2514.4	15.1	12.1	0.874
14	16.0	2514.4	15.1	13.6	0.824
15	18.0	2514.4	15.1	15.0	0.781
16	20.0	2514.4	15.1	16.4	0.743
17	22.0	2519.8	20.5	17.7	0.709
18	24.0	2518.2	18.8	19.0	0.679
19	26.0	2513.9	14.6	20.2	0.652
20	28.0	2513.9	14.6	21.4	0.627
21	30.0	2513.9	14.6	22.5	0.604
22	35.0	2513.3	14.0	25.3	0.555
23	40.0	2513.3	14.0	27.8	0.514
24	45.0	2513.1	13.8	30.1	0.479
25	50.0	2512.8	13.5	32.2	0.449
26	55.0	2517.5	18.2	34.2	0.423
27	60.0	2515.3	16.0	36.1	0.400
28	70.0	2520.4	21.1	39.5	0.361
29	80.0	2520.3	21.0	42.5	0.329
30	90.0	2519.8	20.5	45.2	0.303
31	100.0	2515.1	15.8	47.5	0.280
32	110.0	2512.8	13.5	49.7	0.261
33	120.0	2509.3	10.0	51.6	0.244
34	135.0	2517.6	18.3	54.2	0.223
35	150.0	2508.5	9.2	56.5	0.205
36	165.0	2516.6	17.3	58.5	0.190
37	180.0	2515.5	16.2	60.3	0.177
38	195.0	2729.5	230.2	61.9	0.166
G 39	195.2	2518.4	19.1	61.9	0.166

TEMPERATURE
PRESSURE
TIME
DATE

HALLIBURTON SERVICES

TICKET NUMBER: 54777501

TEST DATE: 3-2-88

CLOCK NUMBER: 5937

HOUR: 24

GAUGE NUMBER: 5618

GAUGE DEPTH: 10247.0

REMARKS:

DUE TO THICKNESS OF PRESSURE TRACE FOR THIS GAUGE, SOME OF
THE READINGS SHOULD BE CONSIDERRED
QUESTIONABLE.

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HALLIBURTON SERVICES

TICKET NUMBER: 34777301
 TEST DATE: 3-2-88
 GAUGE NUMBER: 5619
 GAUGE DEPTH: 10130.0
 BLANKED OFF: NO
 CLOCK HOUR: 24

DESCRIPTION	PRESSURE		TIME		TYPE
	REPORTED	CALCULATED	REPORTED	CALCULATED	
A INITIAL HYDROSTATIC	0	4670.2			
B INITIAL FIRST FLOW	0	2074.6			
C FINAL FIRST FLOW	0	2469.5	30.0	26.5	F
D INITIAL FIRST CLOSED-IN	0	2469.5			
E FINAL FIRST CLOSED-IN	0	2488.0	62.0	56.1	C
F INITIAL SECOND FLOW	0	2457.3			
G FINAL SECOND FLOW	0	2476.4	89.0	84.1	F
H INITIAL SECOND CLOSED-IN	0	2476.4			
I FINAL SECOND CLOSED-IN	0	2481.7	190.0	193.2	C
J FINAL HYDROSTATIC	0	4663.5			

34777301
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TICKET NUMBER: 54777501
TEST DATE: 3-2-88
GAUGE NUMBER: 5618
GAUGE DEPTH: 10247.0
BLANKED OFF: YES
CLOCK HOUR: 24

DESCRIPTION	PRESSURE		TIME		TYPE
	REPORTED	CALCULATED	REPORTED	CALCULATED	
A INITIAL HYDROSTATIC	0	4741.5			
B INITIAL FIRST FLOW	0	2163.0			
C FINAL FIRST FLOW	0	2408.8	30.0	26.5	F
C INITIAL FIRST CLOSED-IN	0	2408.8			
D FINAL FIRST CLOSED-IN	0	2511.9	62.0	56.1	C
E INITIAL SECOND FLOW	0	2407.5			
F FINAL SECOND FLOW	0	2499.3	60.0	64.1	F
F INITIAL SECOND CLOSED-IN	0	2499.3			
G FINAL SECOND CLOSED-IN	0	2518.4	190.0	195.2	C
H FINAL HYDROSTATIC	0	4722.1			

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TICKET NUMBER: 54777501

TEST DATE: 3-2-88

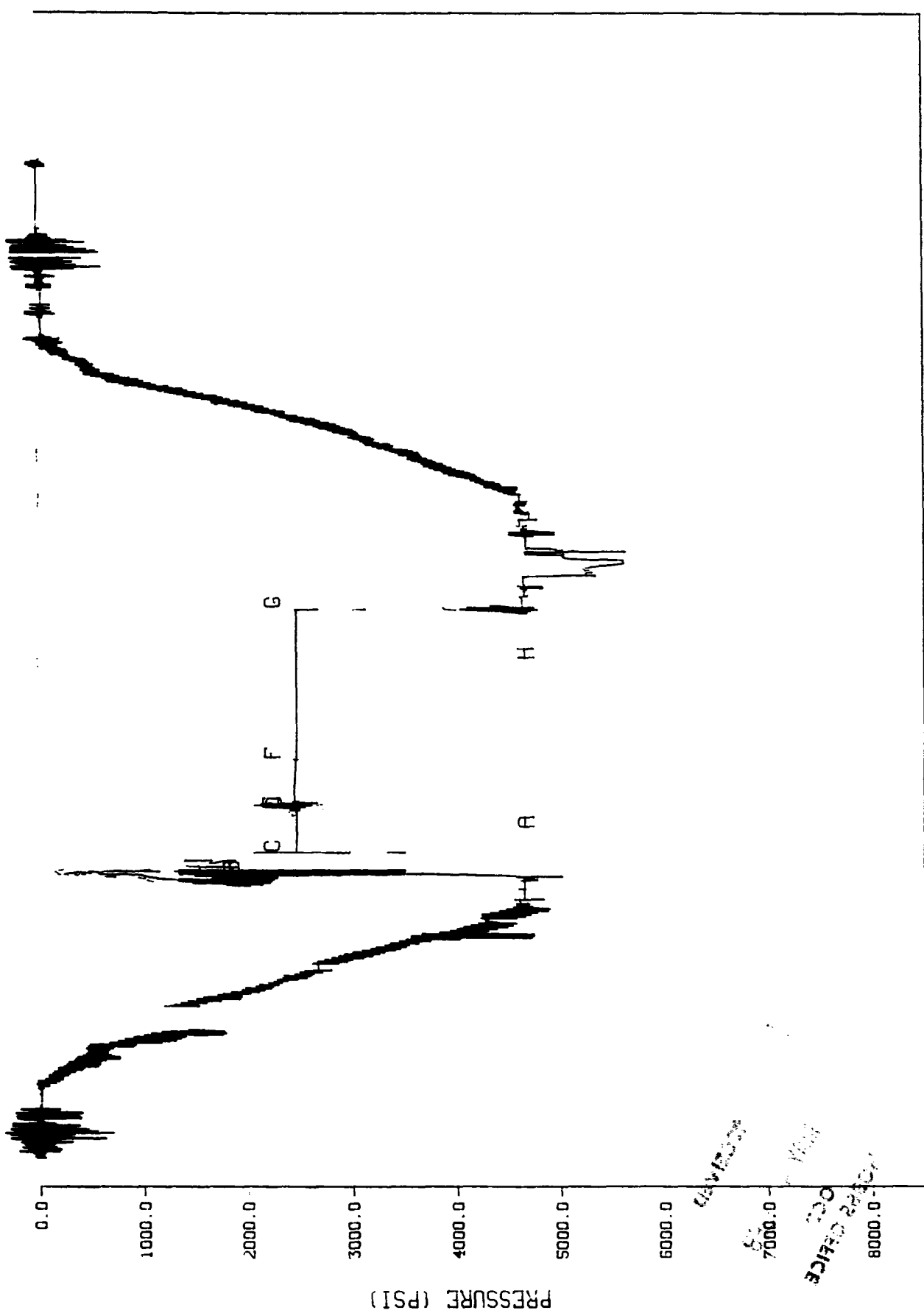
TYPE AND SIZE MEASURING DEVICE: SIX INCH POSITIVE CHOKE NIPPLE

TIME	CHOKE SIZE	SURFACE PRESSURE (PSI)	GAS RATE (MCF)	LIQUID RATE (BPD)	REMARKS
3-2-88					
0245					TRIP IN HOLE WITH TEST TOOLS
0753	BH				OPEN TOOL, 3" BLOW IN BUBBLE BUCKET.
0800	BH	1			INCREASING
0805	BH	2			
0810	BH	3			
0815	BH	3.5			
0820	BH	4			
0826	BH	4.5			CLOSE TOOL
0928	BH	21			OPEN TOOL
0940	BH	32			INCREASING
0948	BH	32			STABLE
0949	1/4"	25			OPEN ON 1/4" CHOKE, GAS TO SEPARATER.
0959	1/4"	25			GAS TO SURFACE
1010	1/4"	22			DECREASING
1018	1/4"	18			DECREASING
1028	1/4"	15			PRESSURE DECREASING - CLOSE TOOL.
1030					CLOSE DUAL CIP VALVE, TURN 11 TURNS.
1347					OPEN BYPASS
1409					LOAD DRILL PIPE, 25 BBLs
1420					BURST PUMP OUT DISK
1430					REVERSE OUT
1615					PULL OUT OF HOLE WITH TEST TOOLS

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TICKET NUMBER: 54777501
GAUGE NUMBER: 5619

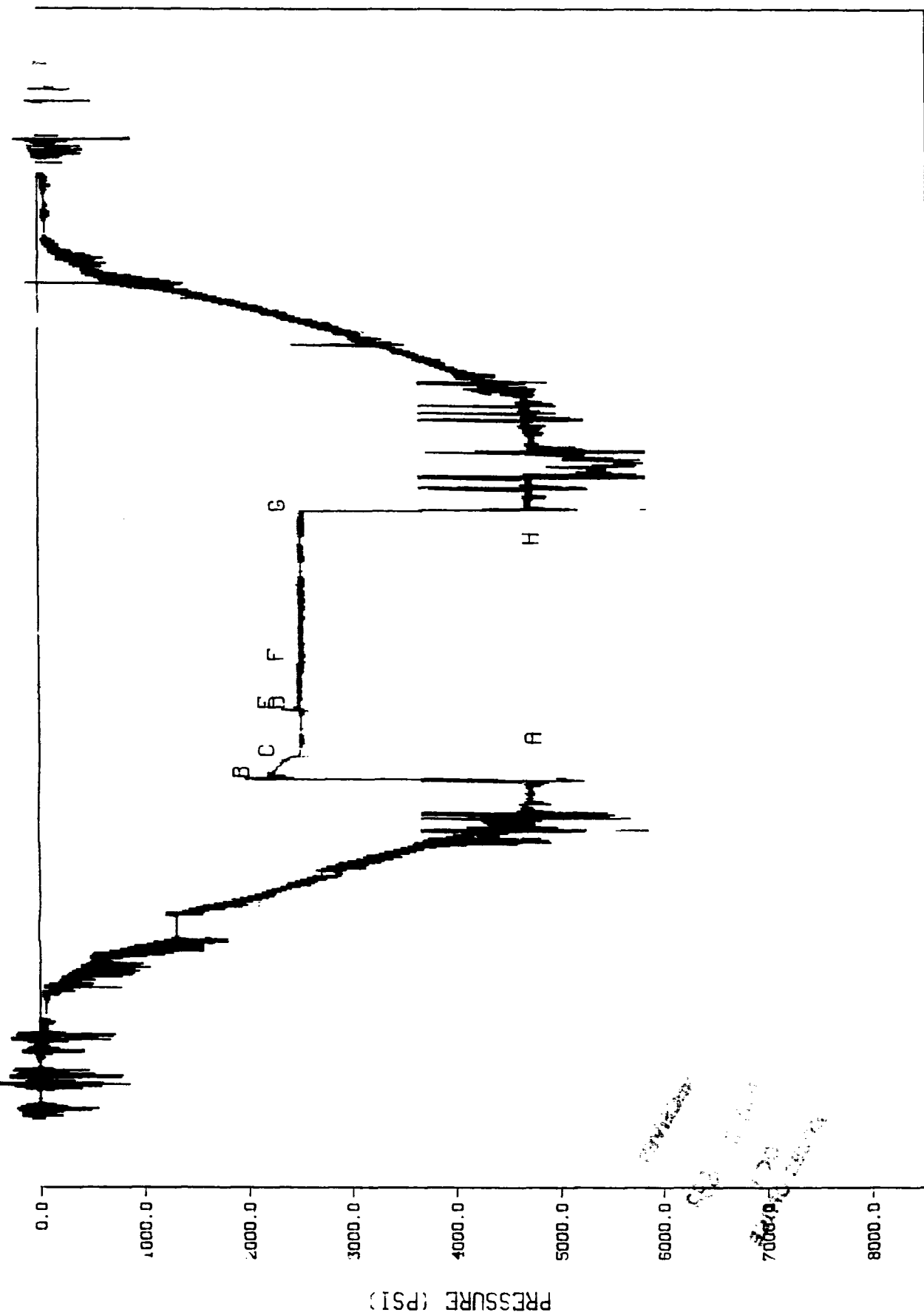


TIME

WELL HEAD
OCC. OFFICE
WELL HEAD

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OCD
HOBBS OFFICE

TICKET NUMBER: 54777501
GAUGE NUMBER: 5618



TIME

	TOOL EQUIPMENT	O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE	3.500	2.764	9999.0	
3	DRILL COLLARS	4.750	2.250	850.0	
50	IMPACT REVERSING SUB	4.750	2.250	1.0	9949.0
3	DRILL COLLARS	4.750	2.250	120.0	
5	CROSSOVER	4.750	2.250	0.9	
5	CROSSOVER	4.750	1.500	0.6	
12	DUAL CIP VALVE	3.875	3.870	6.0	
5	CROSSOVER	3.750	1.250	0.7	
5	CROSSOVER	4.750	1.500	0.8	
5	CROSSOVER	4.625	2.000	0.8	
3	DRILL COLLARS	4.750	2.250	30.0	
5	CROSSOVER	4.750	2.250	0.6	
97		4.875	0.500	1.0	10110.0
5	CROSSOVER	4.625	1.375	1.0	
62	MULTIPLE CIP SAMPLER	3.875	0.620	10.0	10121.0
14	EXTENSION JOINT	3.875	0.880	4.0	
14	EXTENSION JOINT	3.875	0.880	4.0	
80	RP RUNNING CASE	3.875	3.000	5.0	10132.0
15	JAR	3.875	1.250	5.0	
16	VR SAFETY JOINT	3.875	0.750	3.0	
70	OPEN HOLE PACKER	5.500	0.750	5.0	10146.0
70	OPEN HOLE PACKER	5.500	0.750	5.0	10151.0
19	ANCHOR PIPE SAFETY JOINT	3.875	0.750	4.0	

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	TOOL EQUIPMENT	O.D.	I.D.	LENGTH	DEPTH
5	 CROSSOVER	4.750	1.750	0.6	
5	 CROSSOVER	4.750	2.500	0.5	
3	 DRILL COLLARS	4.750	2.250	61.0	
5	 CROSSOVER	4.750	2.000	0.8	
5	 CROSSOVER	4.750	1.500	0.6	
20	 FLUSH JOINT ANCHOR	3.750	1.750	25.0	
81	 BLANKED-OFF RUNNING CASE	3.750	0.000	4.0	10247.0
	TOTAL DEPTH				10250.0

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