Schlumberger

FORMATION MICRO-SCANNER MONITOR LOG

CONFIDENTIAL

COUNTY	DESCHUTES
FIELD	NEWBERRY KGRA
LOCATION	400' E & 1500'S OF NW CORNER SEC. 21
WELL	NEWBERRY 23-22
COMPANY	C. E. EXPLORATION

COMPANY C. E. EXPLORATION

WELL NEWBERRY 23-22

FIELD NEWBERRY KGRA

COUNTY DESCHUTES **STATE** OREGON

LOCATION
400' E & 1500'S OF NW CORNER SEC. 21

Other Services:
SHDT-GR

API SERIAL NO.	SECT.	TWP.	RANGE
N/A	21	21 S	12 E

Permanent Datum GROUND LEVEL Elev. 6365.1 F
Log Measured From KELLY BUSHING 30.0 F above Perm. Datum
Drilling Measured From KELLY BUSHING

Elev.: K.B.6395.1 F
D.F.6394.1 F
G.L.6365.1 F

Date	11-DEC-1995		
Run No.	ONE		
Depth Driller	9602.0 F		
Depth Logger (Schl.)	9100.0 F		
Btm. Log Interval	9100.0 F		
Top Log Interval	4410.0 F		
Casing-Driller	13 3/8" @ 4418.0 F	@	@
Casing-Logger	4410.0 F		
Bit Size	12 1/4" @	@	@
Type Fluid in Hole	LSND		
Dens. / Visc.	8.90 LB/G / 37.0 S	/	/
pH / Fld. Loss	10.0 / 11.8 C3	/	/
Source of Sample	FLOWLINE		
Rm @ Meas. Temp.	2.450 OHMM @ 62.0 DEGF	@	@
Rmf @ Meas. Temp.	2.200 OHMM @ 61.0 DEGF	@	@
Rmc @ Meas. Temp.	3.340 OHMM @ 64.0 DEGF	@	@
Source: Rmf / Rmc	MEASURED / MEASURED	/	/
Rm @ BHT	.441 OHMM @ 376. DEGF	@	@
TIME Circulation Ended	03:30 11-DEC-1995		
TIME Logger on Bottom	11-DEC-1995 15:22		
Max. Rec. Temp.	376. DEGF		
Equip. / Location	8357 / LONG BEACH	/	/
Recorded By	G. TRACY		
Witnessed By	FRED PULKA		

The well name, location and borehole reference data were furnished by the customer.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations made by any of our officers, agents or employees. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule.

Run No.	ONE	
Service Order No.	624590	
Drilling Fluid Level	0.0 F	
Salinity	400.0 PPM	
Rmf @ BHT	.391 OHMM @ 376. DEGF	@
Rmc @ BHT	.619 OHMM @ 376. DEGF	@
Logging Speed	1600.0 F/HR	

EQUIPMENT DATA

Tool Number 1	MESTC	
Tool Number 2	GPIT	
Tool Number 3	SGTL	
Tool Number 4	TCCB	
Tool Number 5	SHDT	
Tool Number 6		
Tool Number 7		
Tool Number 8		
Tool Number 9		
Tool Number 10		
Tool Number 11		
Tool Number 12		

REMARKS:

FMS QUIT WORKING CORRECTLY DUE TO HIGH BOREHOLE TEMPERATURE. DIPMETER RUN FROM 5700' TO CASING.

DIPMETER PAD 2 MAY BE FLOATING FROM 5430' TO 5340'.

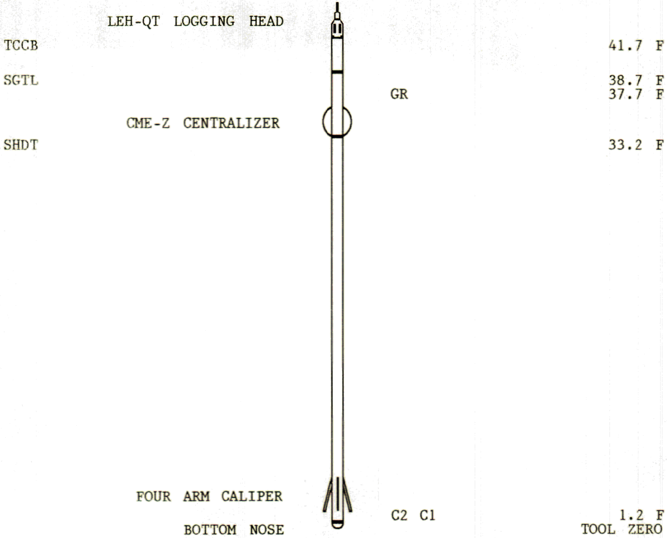
LOG CORRELATED TO HLS DIRECTIONAL RUN 11/4/95.

NOTE CALIPER SCALE CHANGE ON FMS AT 9052.

TD NOT REACHED AT CUSTOMER'S REQUEST DUE TO HIGH BOTTOM HOLE TEMPERATURE.

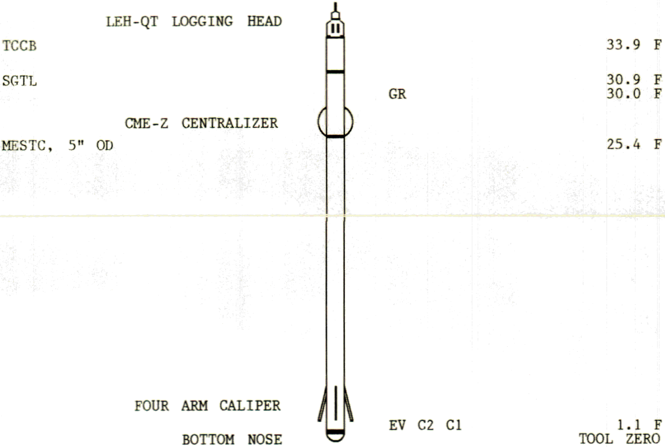
CREW: RAY & SAULSPERRY

LOGGING TOOL STRING SKETCH


LEH-QT LOGGING HEAD
TCCB
41.7 F
SGTL
38.7 F
GR
37.7 F
CME-Z CENTRALIZER
SHDT
33.2 F
FOUR ARM CALIPER
C2 C1
1.2 F
BOTTOM NOSE
TOOL ZERO

TOTAL TOOL STRING LENGTH IS 45.2 F.
TOTAL TOOL STRING WEIGHT IS 592. LB IN AIR.

LOGGING TOOL STRING SKETCH


LEH-QT LOGGING HEAD
TCCB
33.9 F
SGTL
30.9 F
GR
30.0 F
CME-Z CENTRALIZER
MESTC, 5" OD
25.4 F
FOUR ARM CALIPER
EV C2 C1
1.1 F
BOTTOM NOSE
TOOL ZERO

TOTAL TOOL STRING LENGTH IS 37.4 F.
TOTAL TOOL STRING WEIGHT IS 594. LB IN AIR.

SPEED CORRECTION NOT APPLIED

NO KNUCKLE JOINT IS USED (SOFF = -1)

```
ACCUMULATED INTEGRATION VALUES SUMMARY:

Integrated Hole Volume:    197.169 F3    FROM 4638.50 F     TO 4418.00 F
Integrated Cement Volume: 86.0085 F3     FROM 4638.50 F     TO 4418.00 F
  (ASSUMING 9.62500 IN   O.D. CASING)
```

```
EVENT MARK SUMMARY:

OUTPUT                          INTERVAL        DEPTH TRACK
                                BETWEEN PIPS    EDGE

Integrated Hole Volume          10.0000 F3      LEFT EDGE
Integrated Cement Volume        10.0000 F3      RIGHT EDGE
```

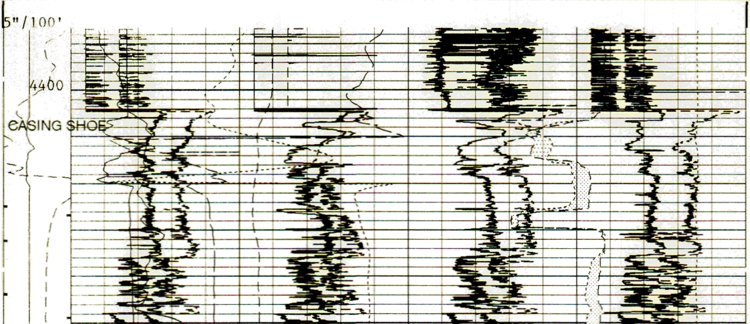
FNOR(OER)	.20000	.70000
ANOR(M/S2)	9.0000	11.000
RB1A	-1000.	4000.0
RDB1	0.0	5000.0
RB2A	-1000.	4000.0
GR(GAPI)	0.0	150.00
RDB2	0.0	5000.0
TENS(LBF)	10000.	0.0
P1AZ(DEG)	-40.00	360.00
RB3A	-1000.	4000.0
RB4A	-1000.	4000.0
RB(DEG)	-40.00	360.00
RDB3	0.0	5000.0
RDB4	0.0	5000.0
HAZI(DEG)	-40.00	360.00
C2(IN)	24.000	4.0000
DEVI(DEG)	0.0	50.000
C1(IN)	24.000	4.0000

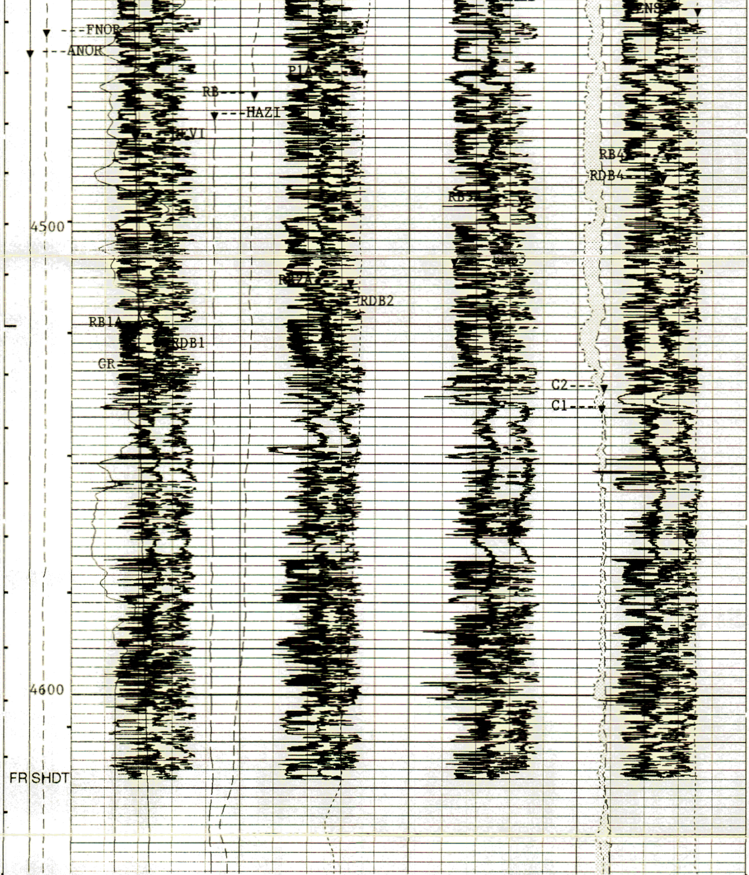
C2 -- C1

C1 -- C2

REPEAT SECTION

CP 41.004   FILE 15   11-DEC-1995 22:12   (UP)

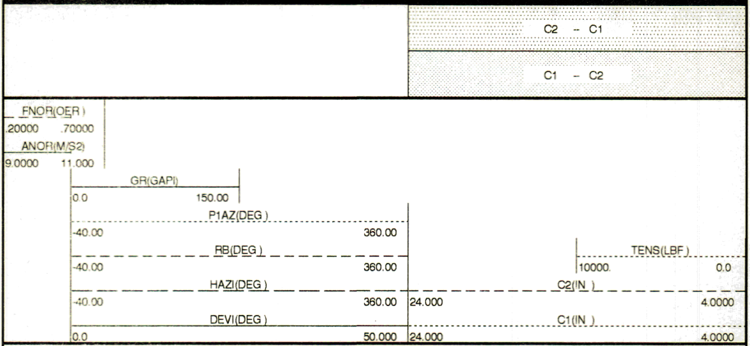




5"/100'

REPEAT SECTION

CP 41.004 FILE 15 11-DEC-1995 22:04 (UP)


C2 -- C1
C1 - C2
FNOR(OER)
.20000 .70000
ANOR(M/S2)
9.0000 11.000
GR(GAPI)
0.0 150.00
P1AZ(DEG)
-40.00 360.00
RB(DEG)
-40.00 360.00
TENS(LBF)
10000. 0.0
HAZI(DEG)
-40.00 360.00
C2(IN)
24.000 4.0000
DEVI(DEG)
0.0 50.000
C1(IN)
24.000 4.0000

SENSOR MEASURE POINT TO TOOL ZERO

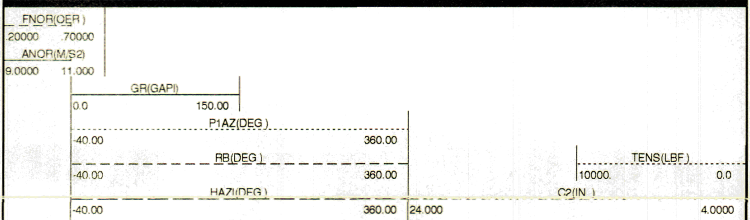
TENS -2.8 FEET
ZB 1.3 FEET
RSHD 1.3 FEET
GR 37.8 FEET
SHDW 1.3 FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
PADT	.500000	DEG	MFIN	.537944	OER
MDEC	17.5760	DEG	MINC	66.7997	DEG
SHDS	B		SHDI	BB	
VREF	-5.00000	V	FCDD	1.	
SOFF	-1.00000	IN	IDFO	RAW	
ODFO	RAW		ICMO	AUTO	
AFMO	HAMM		XMOD	AUTO	
XGAI	3		XOFF	0	
NCJT	GSRY		FCD	9.62500	IN
SPCR	DISA		BS	12.2500	IN
BHS	OPEN				

SPEED CORRECTION NOT APPLIED

NO KNUCKLE JOINT IS USED (SOFF = -1)


FNOR(OER)
.20000 .70000
ANOR(M/S2)
9.0000 11.000
GR(GAPI)
0.0 150.00
P1AZ(DEG)
-40.00 360.00
RB(DEG)
-40.00 360.00
TENS(LBF)
10000. 0.0
HAZI(DEG)
C2(IN)
-40.00 360.00 24.000 4.0000

DEVI(DEG)

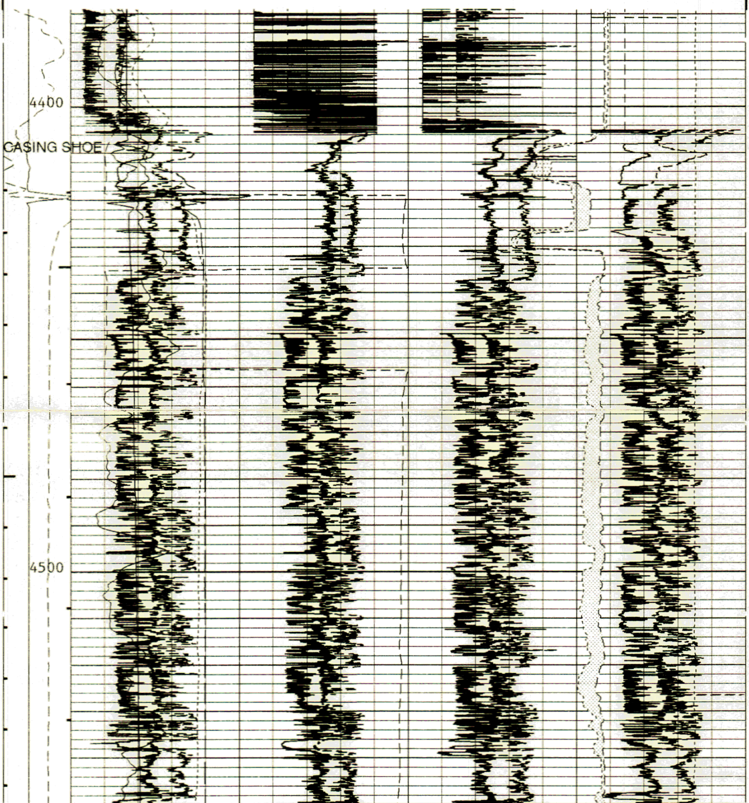
0.0 50.000

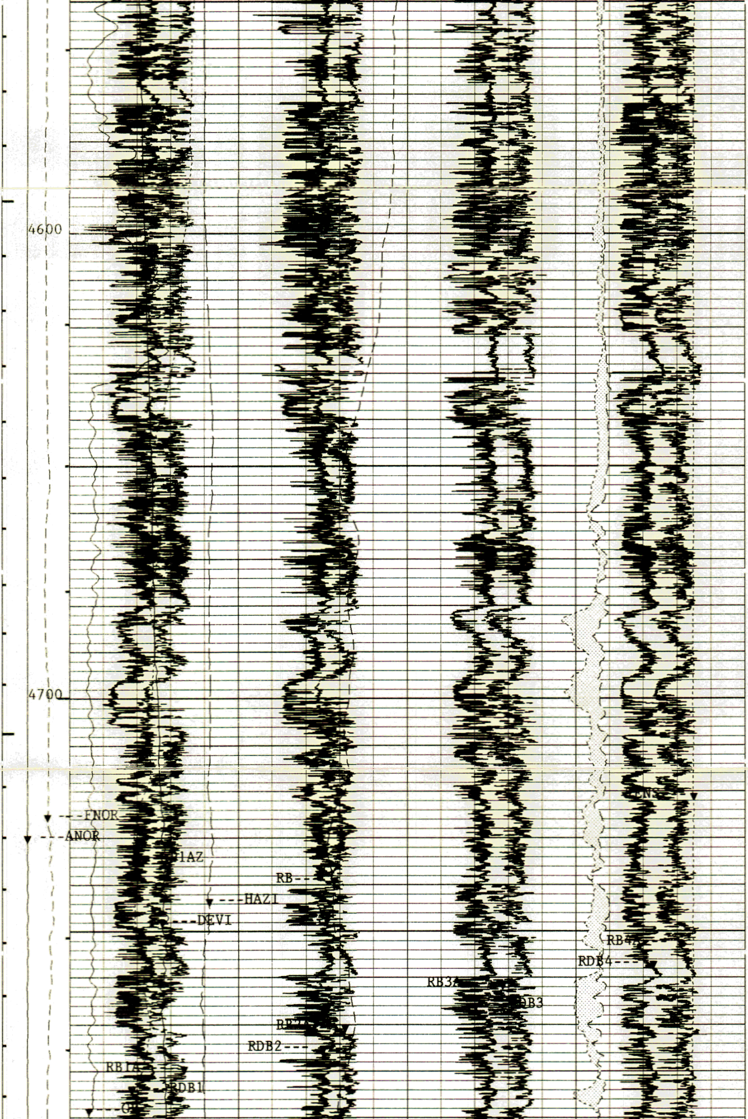
C1(IN)

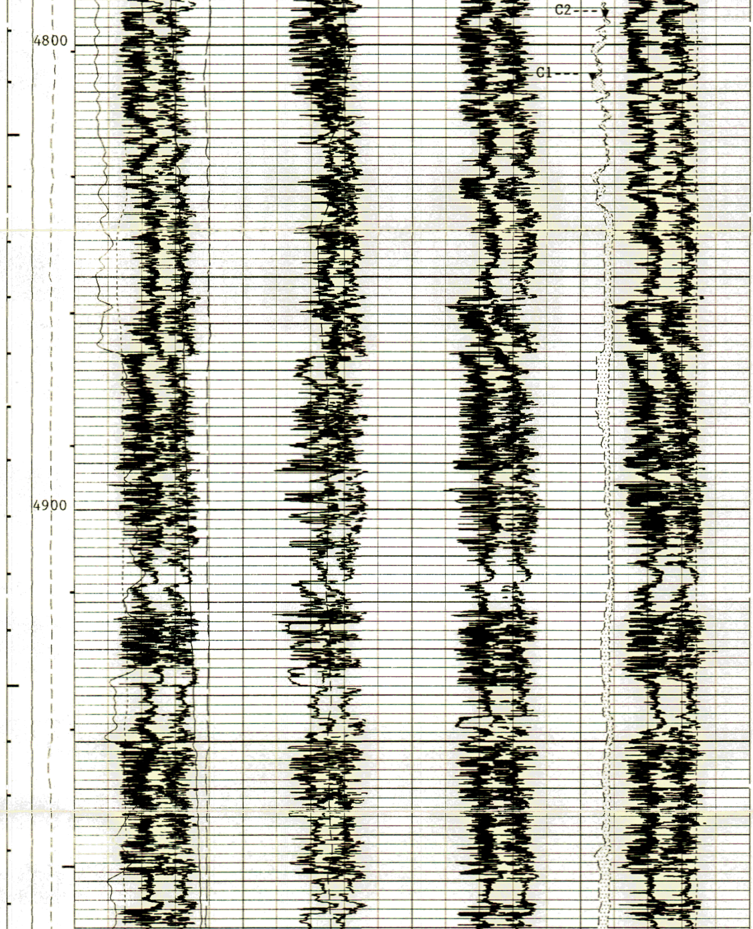
24.000 4.0000

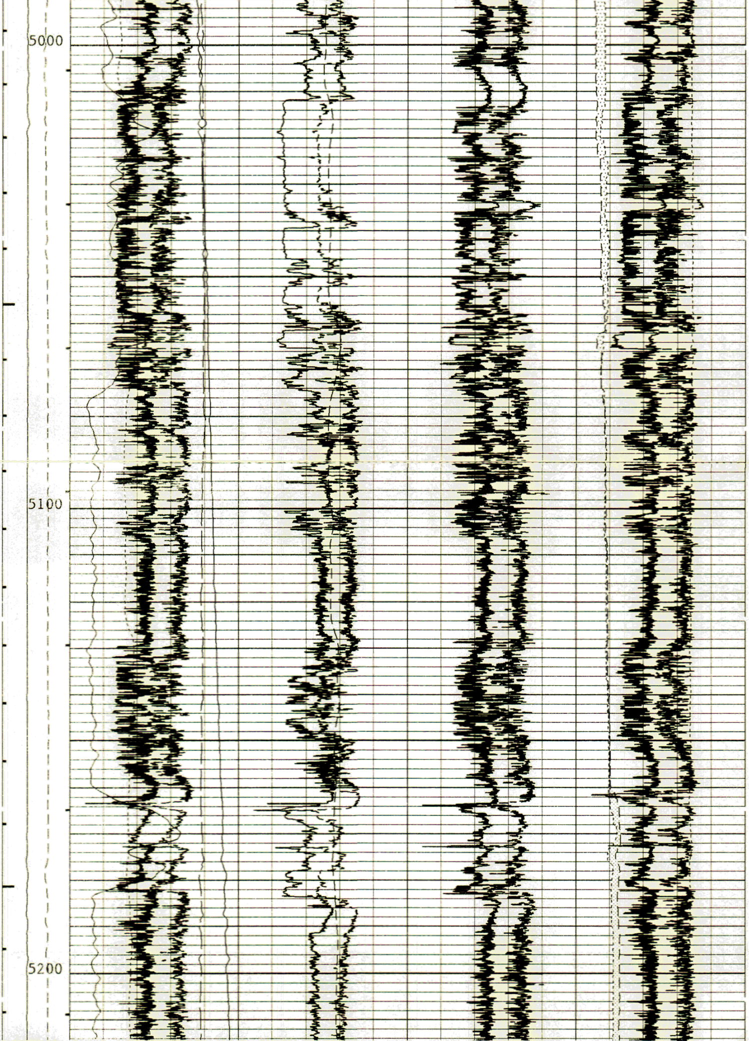
C2 -- C1

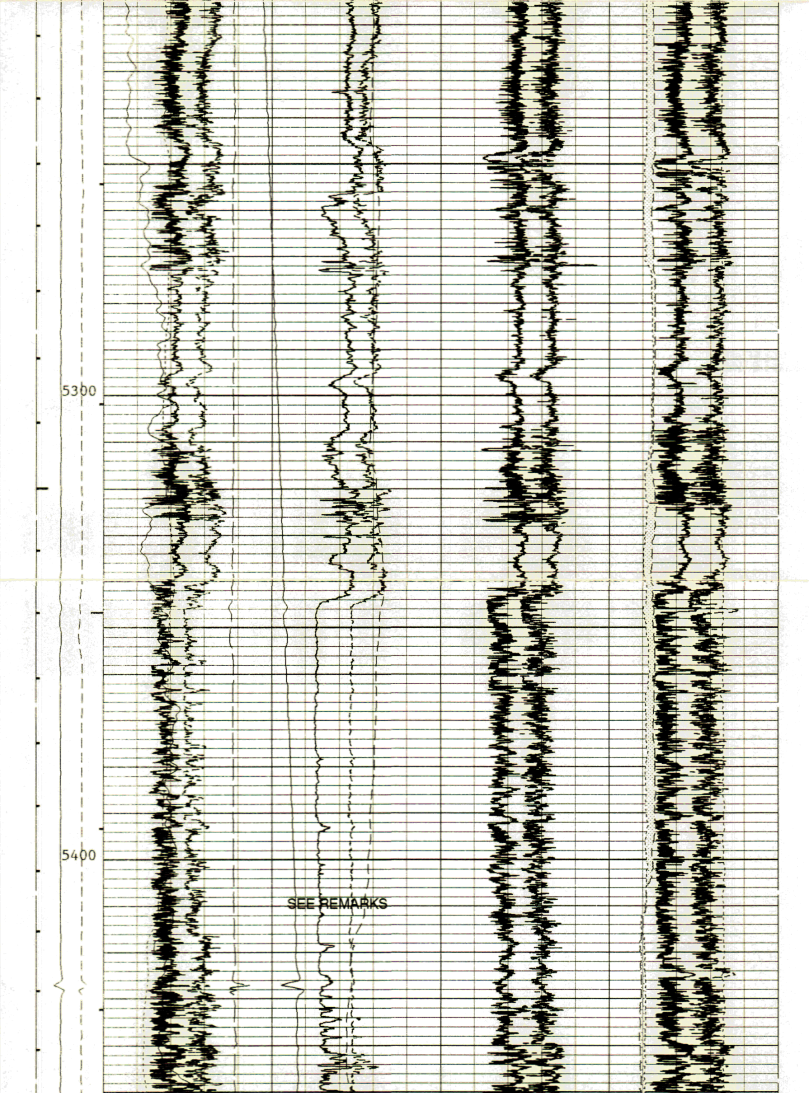
C1 -- C2

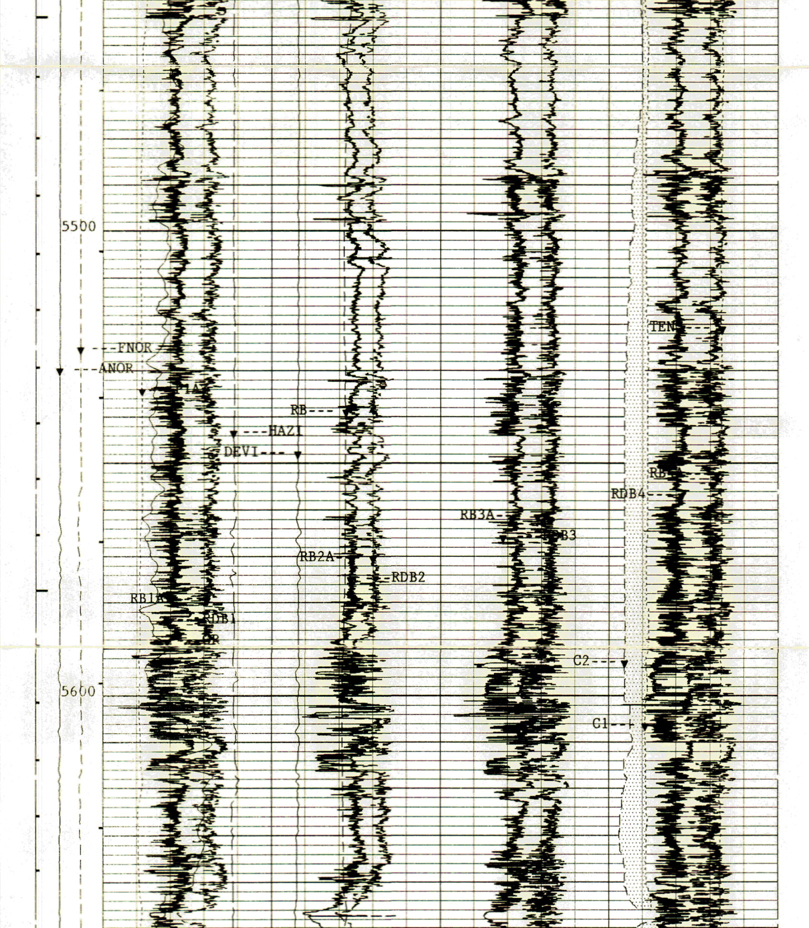


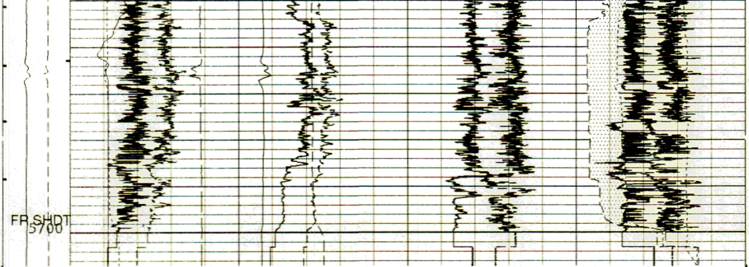






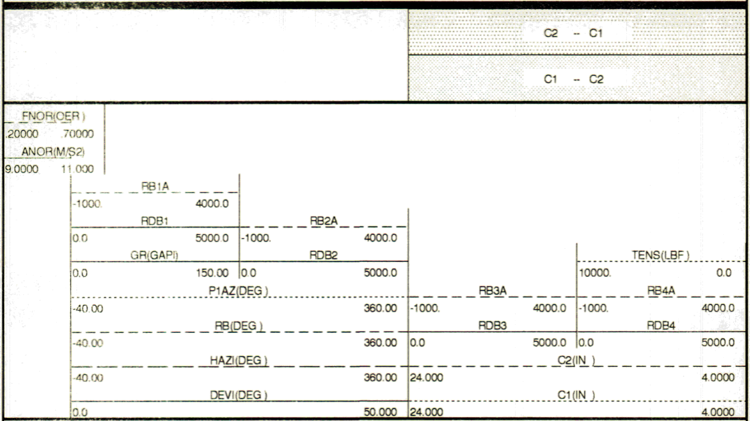






5"/100'

CP 41.004 FILE 14 11-DEC-1995 21:11 (UP)


C2 -- C1
C1 -- C2
FNOR(OER)
.20000 .70000
ANOR(M/S2)
9.0000 11.000
RB1A
-1000. 4000.0
RDB1
0.0 5000.0
RB2A
-1000. 4000.0
GR(GAPI)
0.0 150.00
RDB2
0.0 5000.0
TENS(LBF)
10000. 0.0
P1AZ(DEG)
-40.00 360.00
RB3A
-1000. 4000.0
RB4A
-1000. 4000.0
RB(DEG)
-40.00 360.00
RDB3
0.0 5000.0
RDB4
0.0 5000.0
HAZI(DEG)
-40.00 360.00
C2(IN)
24.000 4.0000
DEVI(DEG)
0.0 50.000
C1(IN)
24.000 4.0000

SENSOR MEASURE POINT TO TOOL ZERO

TENS	-2.8	FEET	GR	37.8	FEET
ZB	1.3	FEET	SHDW	1.3	FEET
RSHD	1.3	FEET			

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
PADT	.500000	DEG	MFIN	.537944	OER
MDEC	17.5760	DEG	MINC	66.7997	DEG
SHDS	B		SHDI	BB	
VREF	-5.00000	V	FCDD	1.	
SOFF	-1.00000	IN	IDFO	RAW	
ODFO	RAW		ICMO	AUTO	
AFMO	HAMM		XMOD	AUTO	
XGAI	3		XOFF	0	

```
NCJT GSRY                          FCD   9.62500      IN
SPCR DISA                          BS    12.2500      IN
BHS  OPEN
```

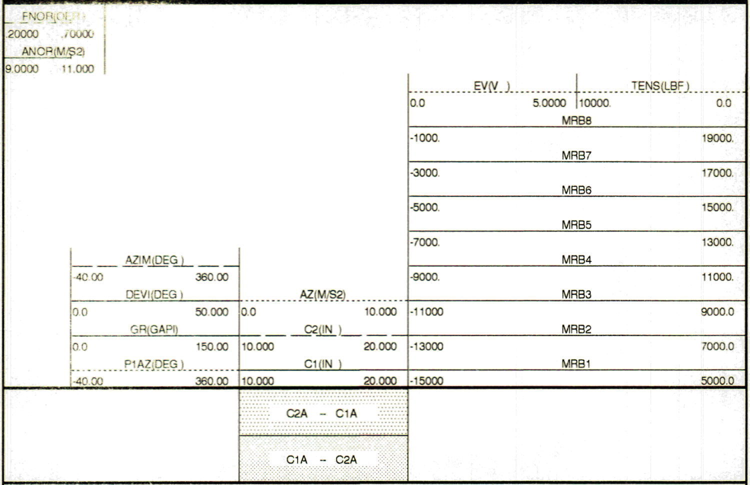
SPEED CORRECTION NOT APPLIED

ACCUMULATED INTEGRATION VALUES SUMMARY:

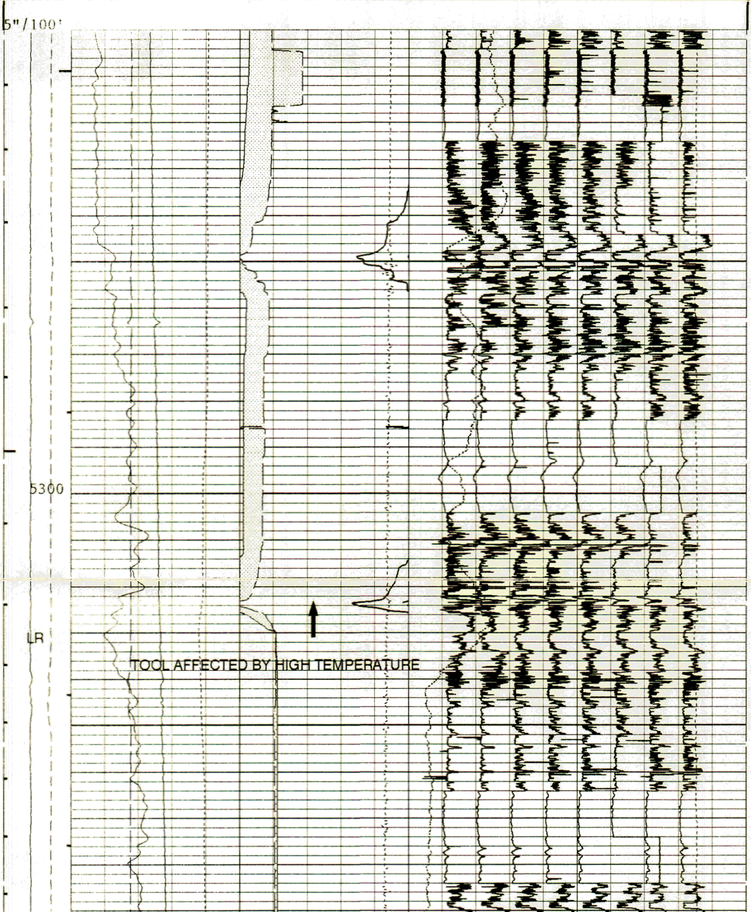
```
Integrated Hole Volume:    1159.07 F3    FROM 6703.50 F    TO 5200.00 F
Integrated Cement Volume: 402.235 F3     FROM 6703.50 F    TO 5200.00 F
  (ASSUMING 9.62500 IN    O.D. CASING)
```

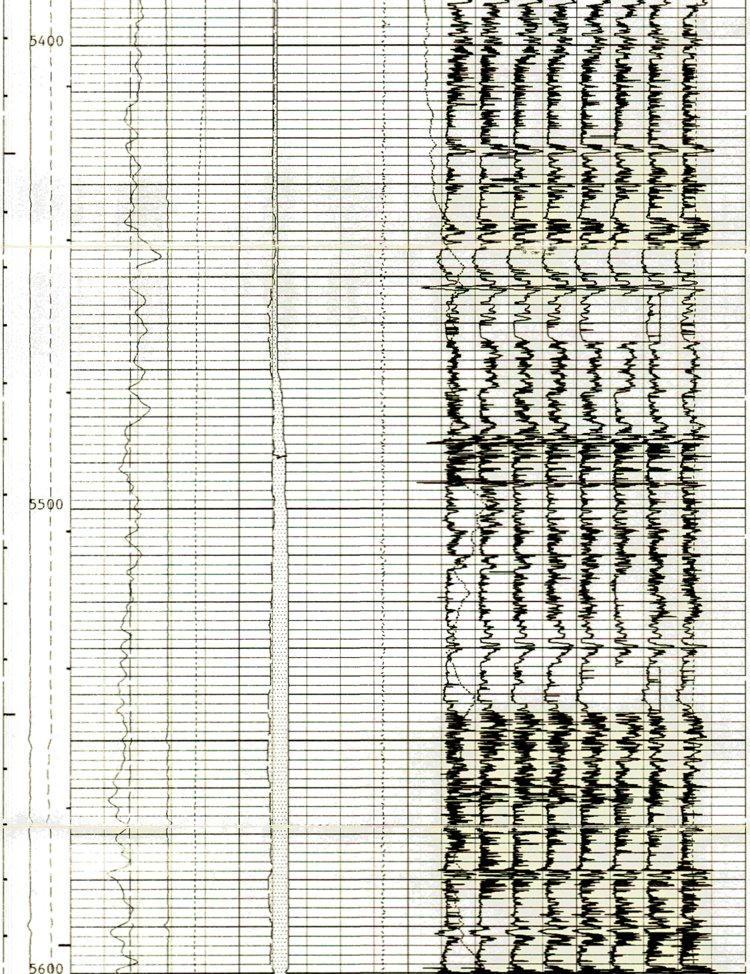
EVENT MARK SUMMARY:

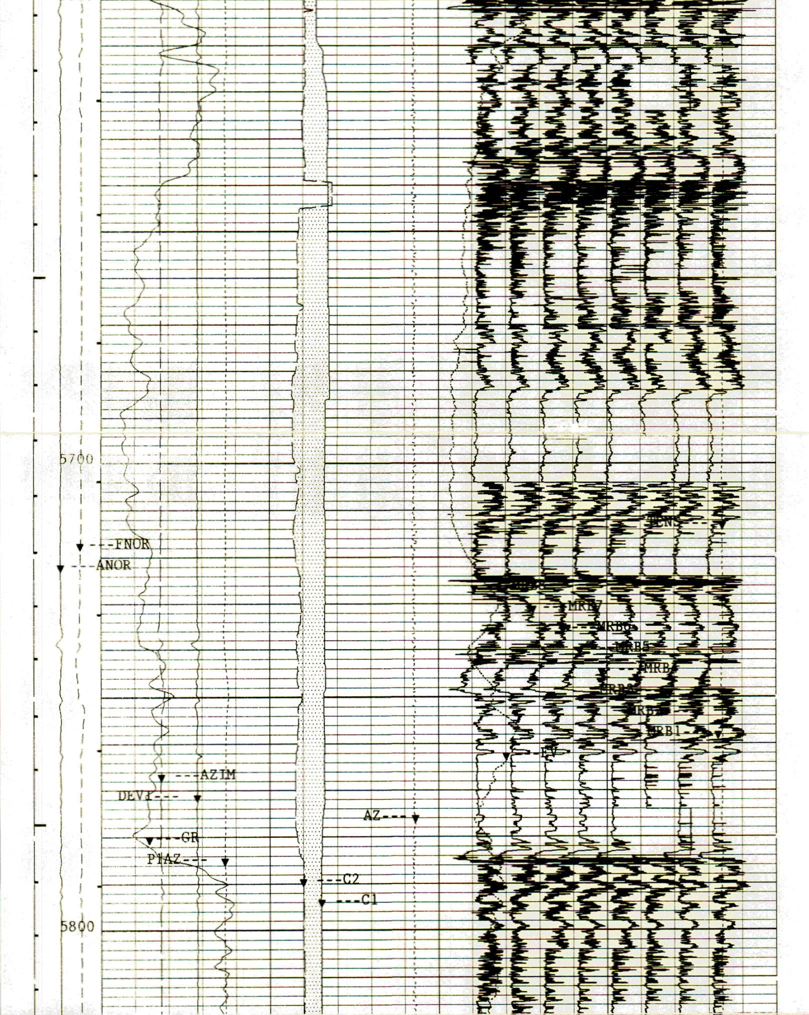
OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK EDGE
Integrated Hole Volume	10.0000 F3	LEFT EDGE
Integrated Cement Volume	10.0000 F3	RIGHT EDGE

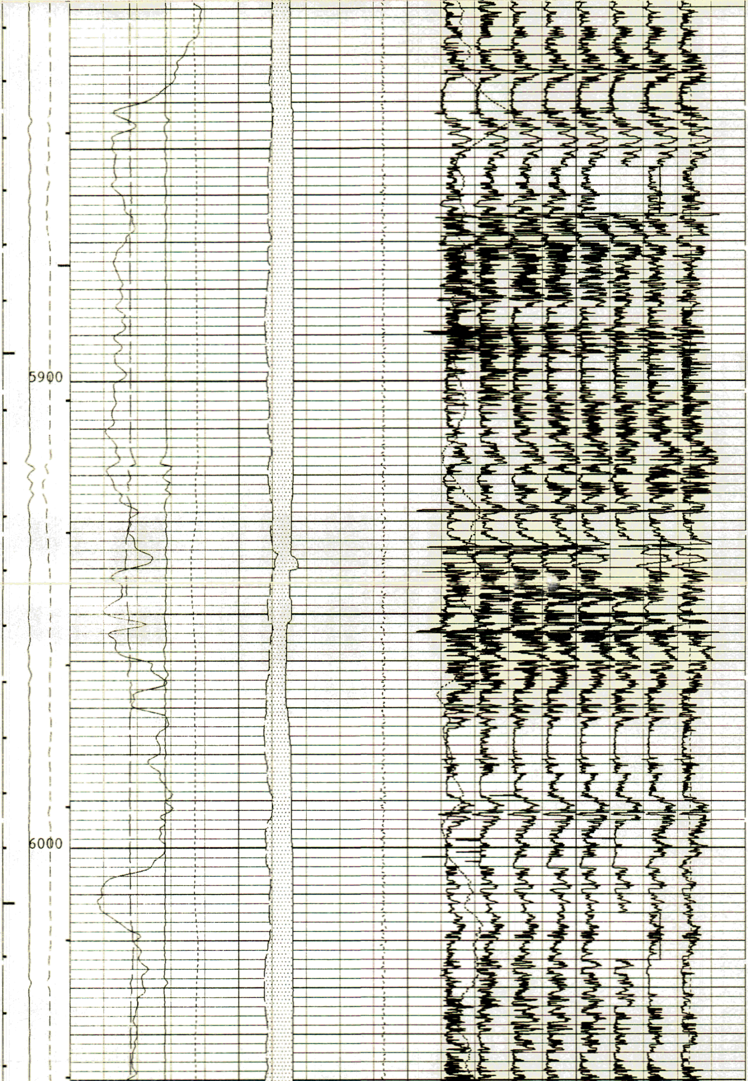

FNOR(OER)
.20000 .70000
ANOR(M/S2)
9.0000 11.000
EV(V)
0.0 5.0000
TENS(LBF)
10000. 0.0
MRB8
-1000. 19000.
MRB7
-3000. 17000.
MRB6
-5000. 15000.
MRB5
-7000. 13000.
MRB4
-9000. 11000.
MRB3
-11000 9000.0
MRB2
-13000 7000.0
MRB1
-15000 5000.0
AZIM(DEG)
-40.00 360.00
DEVI(DEG)
0.0 50.000
GR(GAPI)
0.0 150.00
P1AZ(DEG)
-40.00 360.00
AZ(M/S2)
0.0 10.000
C2(IN)
10.000 20.000
C1(IN)
10.000 20.000
C2A -- C1A
C1A -- C2A

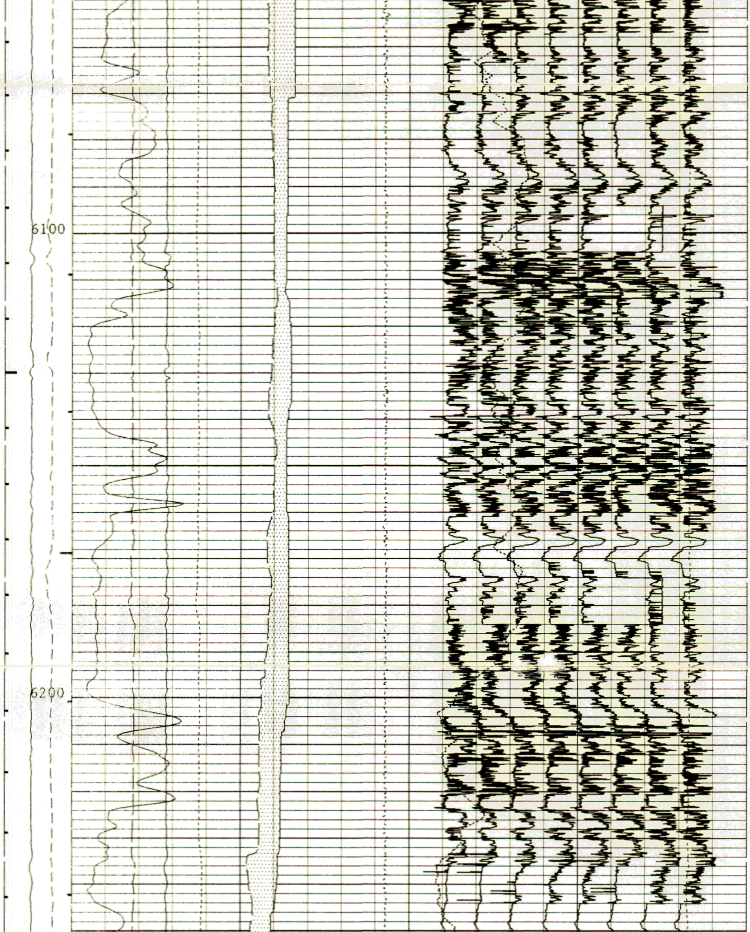
CP 41.004   FILE   6   11-DEC-1995 18:45   (UP)

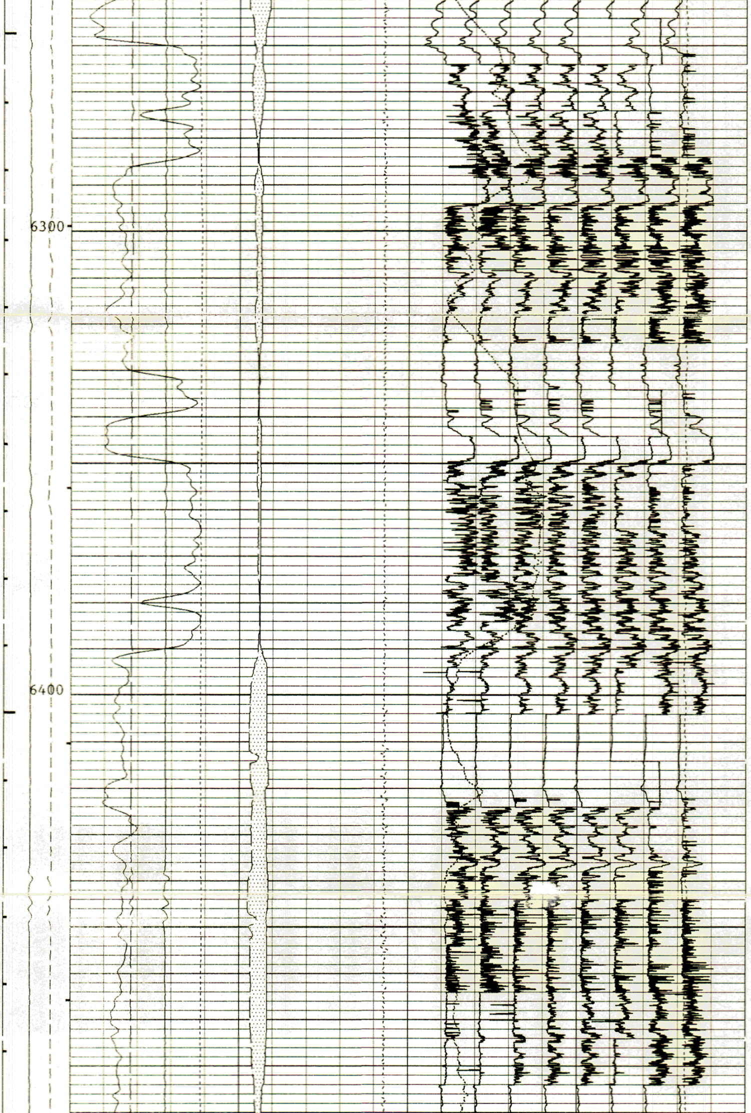


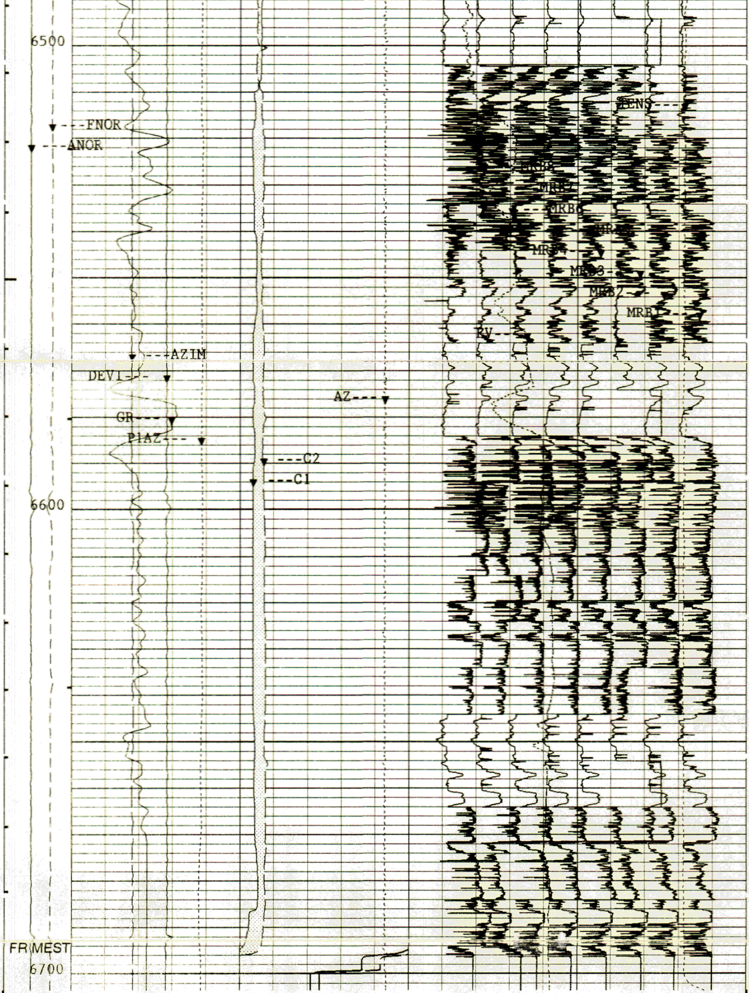












5"/100'

CP 41.004 FILE 6 11-DEC-1995 17:54 (UP)

C2A - C1A

C1A - C2A

Curve	Left	Right
FNOR(OER)	.20000	.70000
ANOR(M/S2)	9.0000	11.000

Curve	Left	Right
EV(V)	0.0	5.0000
TENS(LBF)	10000.	0.0
MRB8	-1000.	19000.
MRB7	-3000.	17000.
MRB6	-5000.	15000.
MRB5	-7000.	13000.
MRB4	-9000.	11000.
MRB3	-11000	9000.0
MRB2	-13000	7000.0
MRB1	-15000	5000.0

Curve	Left	Right
AZIM(DEG)	-40.00	360.00
DEVI(DEG)	0.0	50.000
GR(GAPI)	0.0	150.00
P1AZ(DEG)	-40.00	360.00

Curve	Left	Right
AZ(M/S2)	0.0	10.000
C2(IN)	10.000	20.000
C1(IN)	10.000	20.000

SENSOR MEASURE POINT TO TOOL ZERO

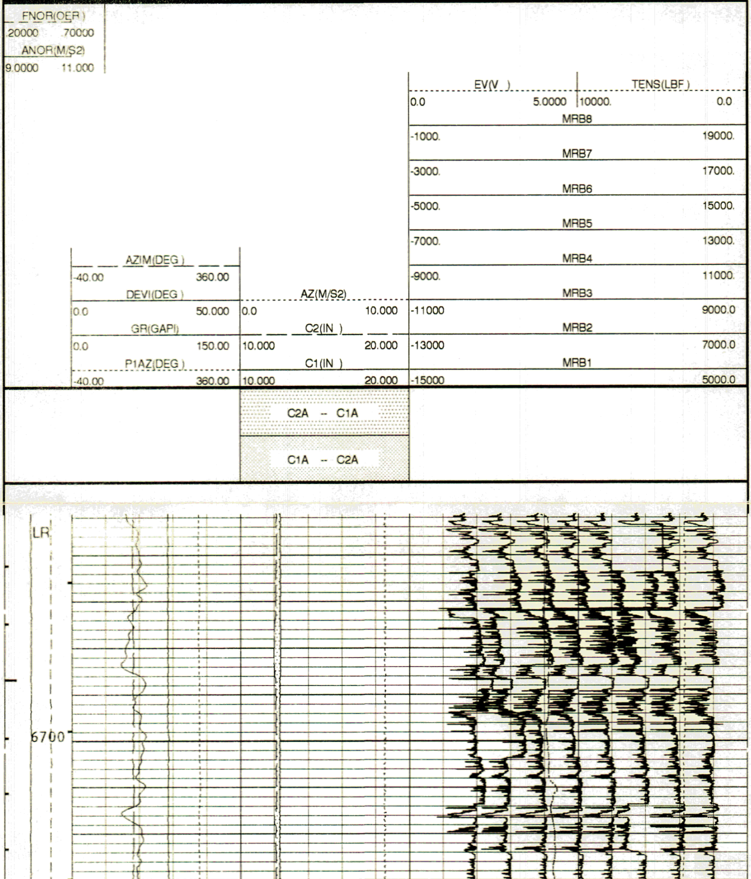
TENS	-2.9	FEET	GR	30.0	FEET
C2	1.1	FEET	C1	1.1	FEET
MRPD	1.1	FEET	MDRB	1.1	FEET
MRPB	1.1	FEET	MRPC	1.1	FEET
AX	1.1	FEET	MRPA	1.1	FEET
AZ	1.1	FEET	AY	1.1	FEET
FY	1.1	FEET	FX	1.1	FEET
FCAX	1.1	FEET	FZ	1.1	FEET
FCAZ	1.1	FEET	FCAY	1.1	FEET
FTIM	1.1	FEET			

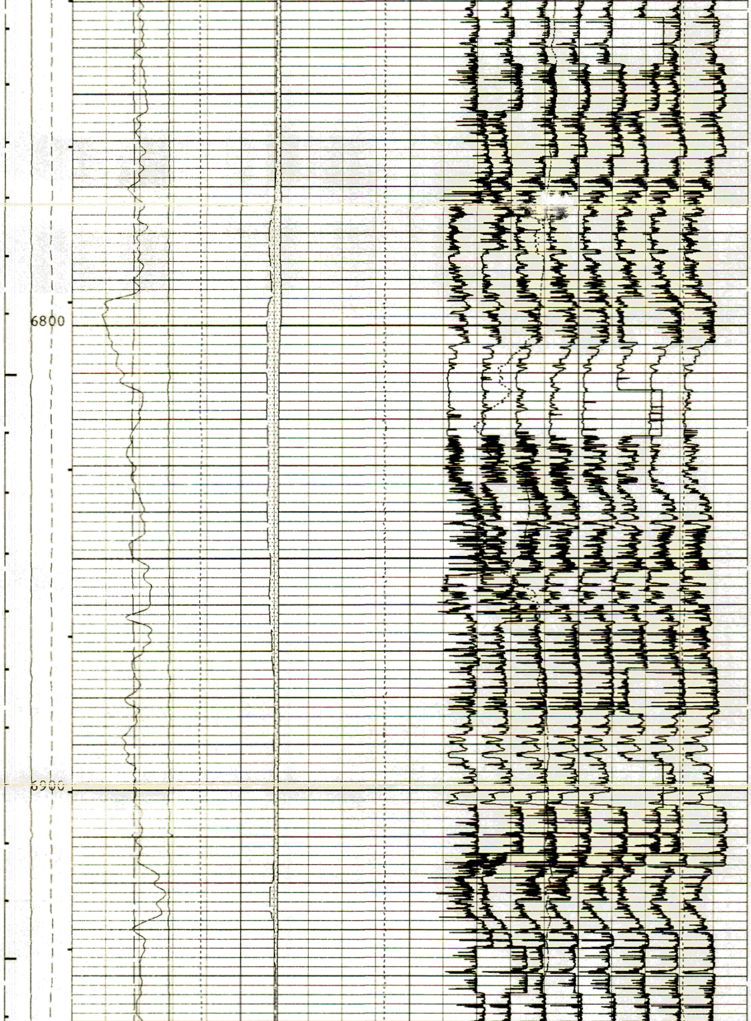
PARAMETERS

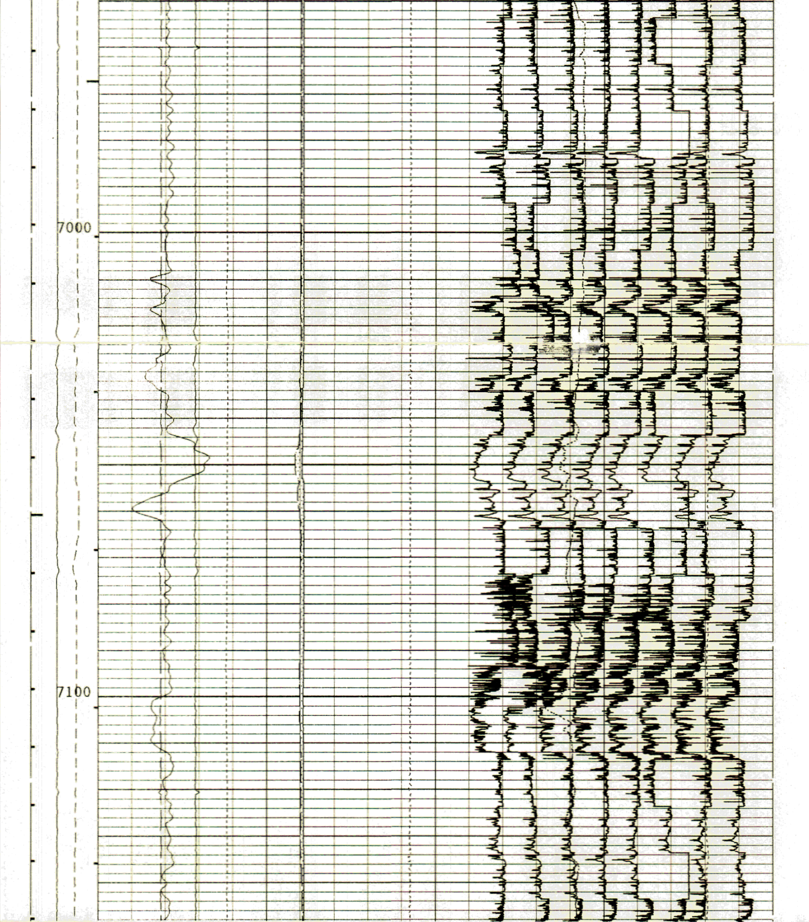
NAME	VALUE	UNIT	NAME	VALUE	UNIT
PADT	.500000	DEG	NCJT	GSRY	
FCSR	0.1"		AFMO	HAMM	
ICMO	AUTO		MDEC	17.5762	DEG
GLM	DIPM		ICSD	-50000.0	F
RBS	AUTO		PTYP	MEC	
MLM	1800		SOFF	-1.00000	IN
CSR	.6"		ODFO	RAW	
XMOD	AUTO		XGAI	3	
XOFF	0		FCD	9.62500	IN
SPCR	DISA		BS	12.2500	IN
BHS	OPEN				

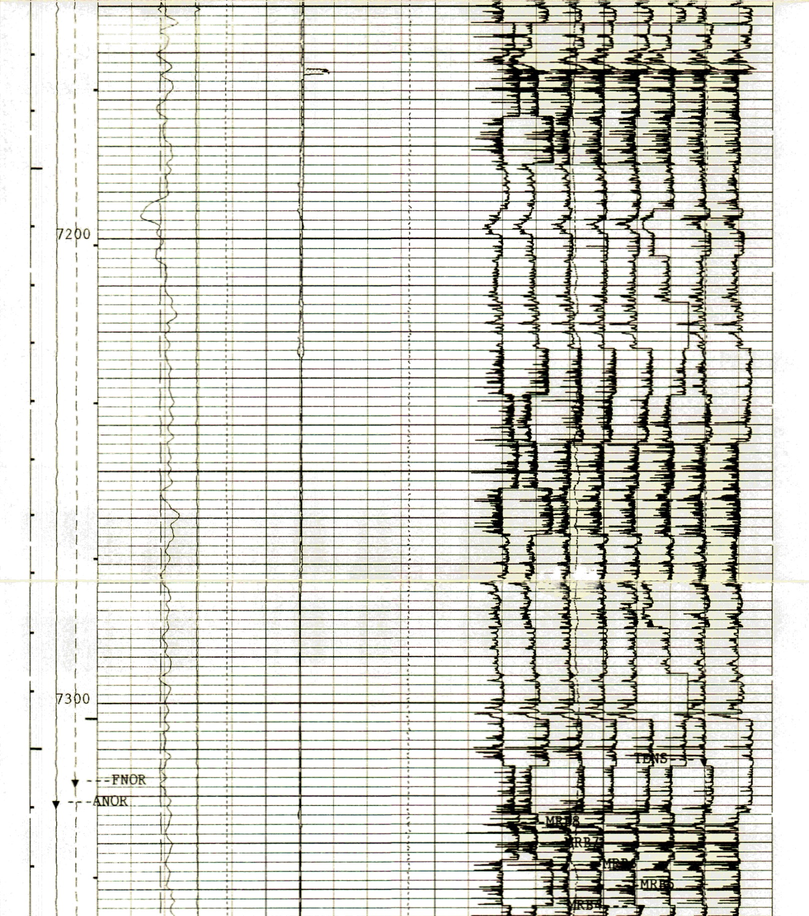
ACCUMULATED INTEGRATION VALUES SUMMARY:

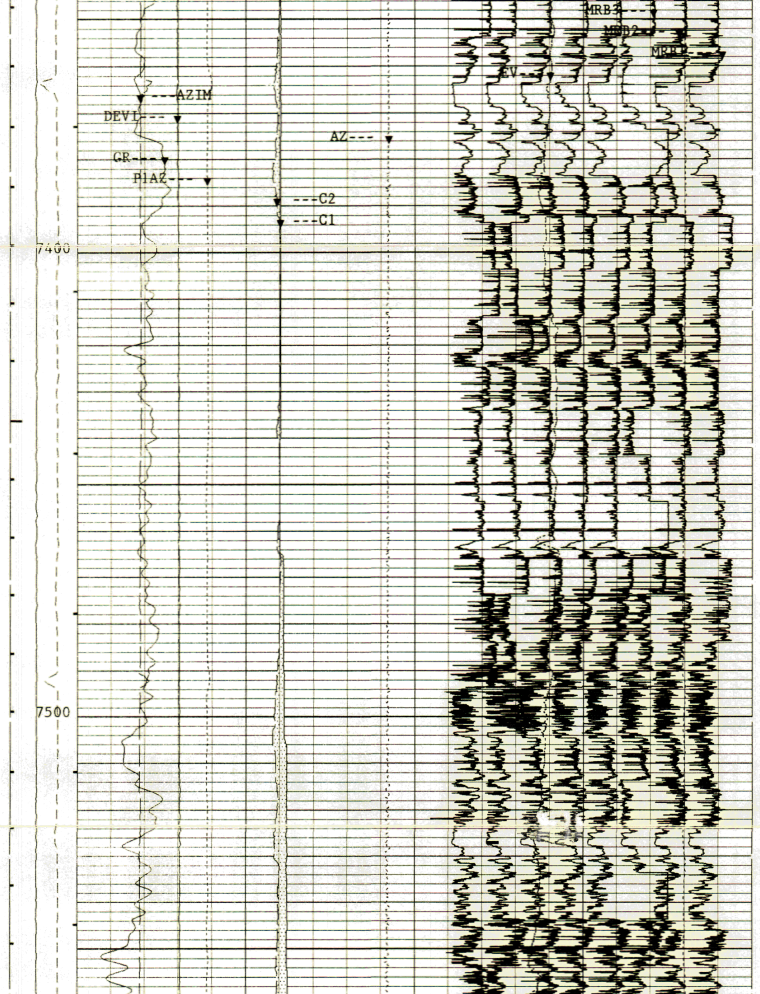
```
Integrated Hole Volume:    197.169 F3    FROM 4638.50 F    TO 4418.00 F
Integrated Cement Volume: 86.0085 F3     FROM 4638.50 F    TO 4418.00 F
   (ASSUMING 9.62500 IN   O.D. CASING)
```

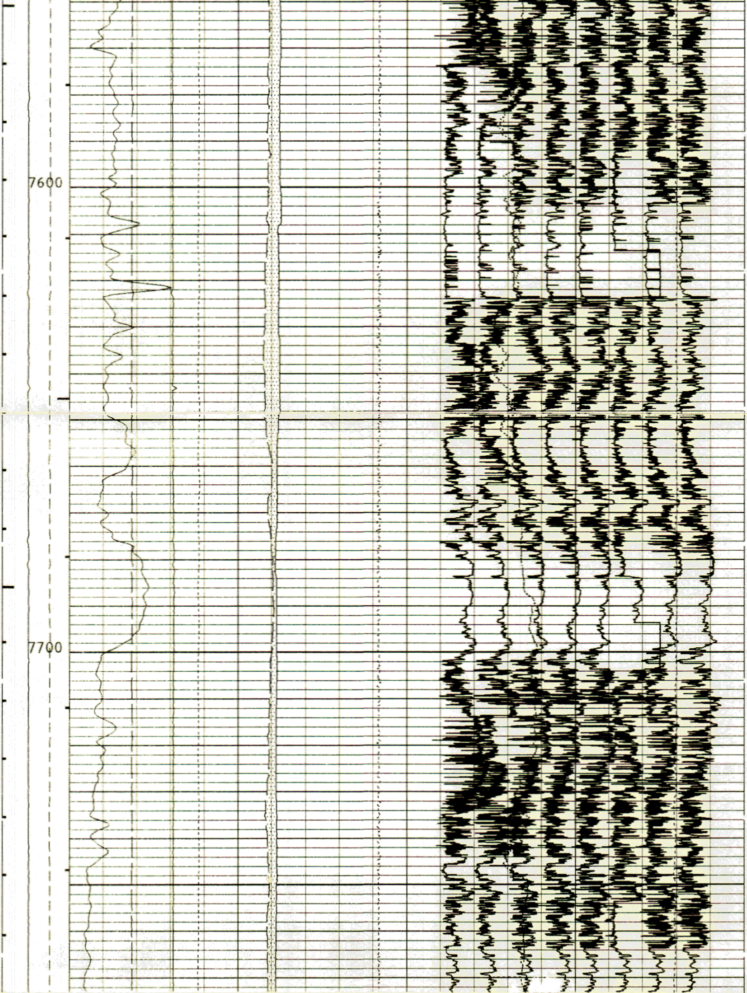


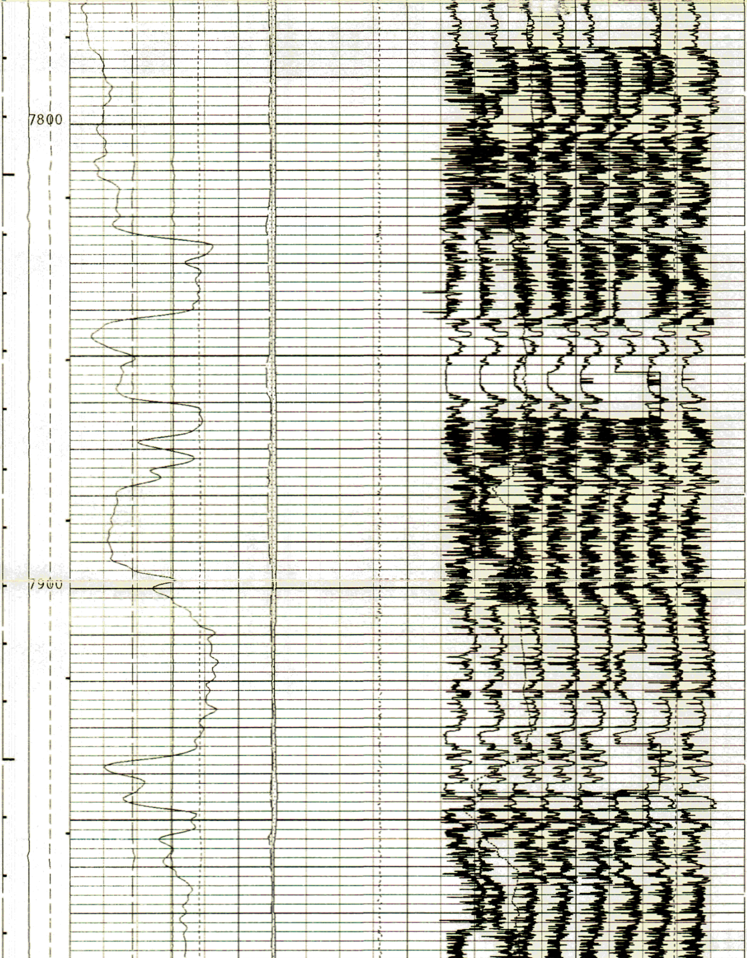


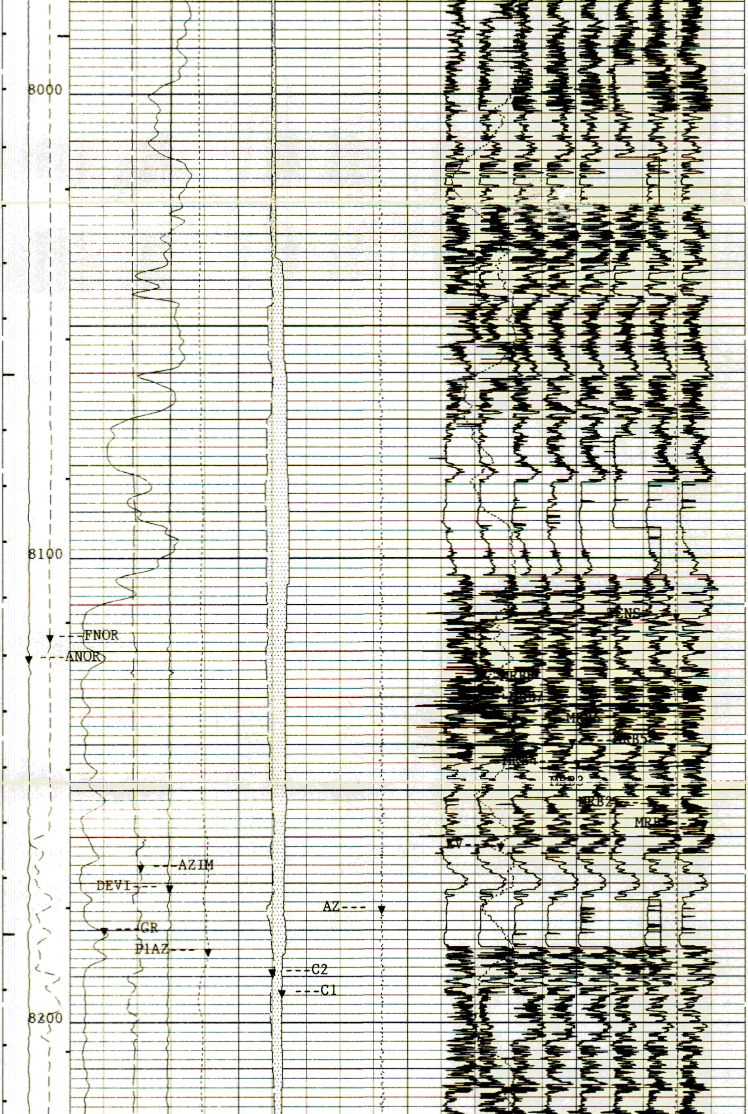


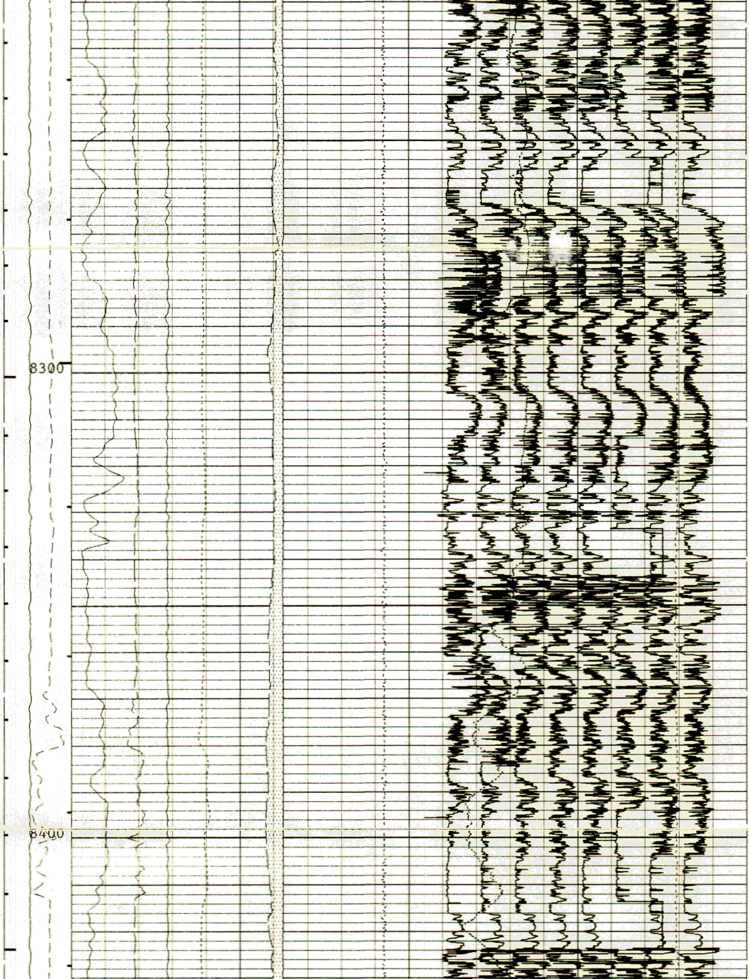


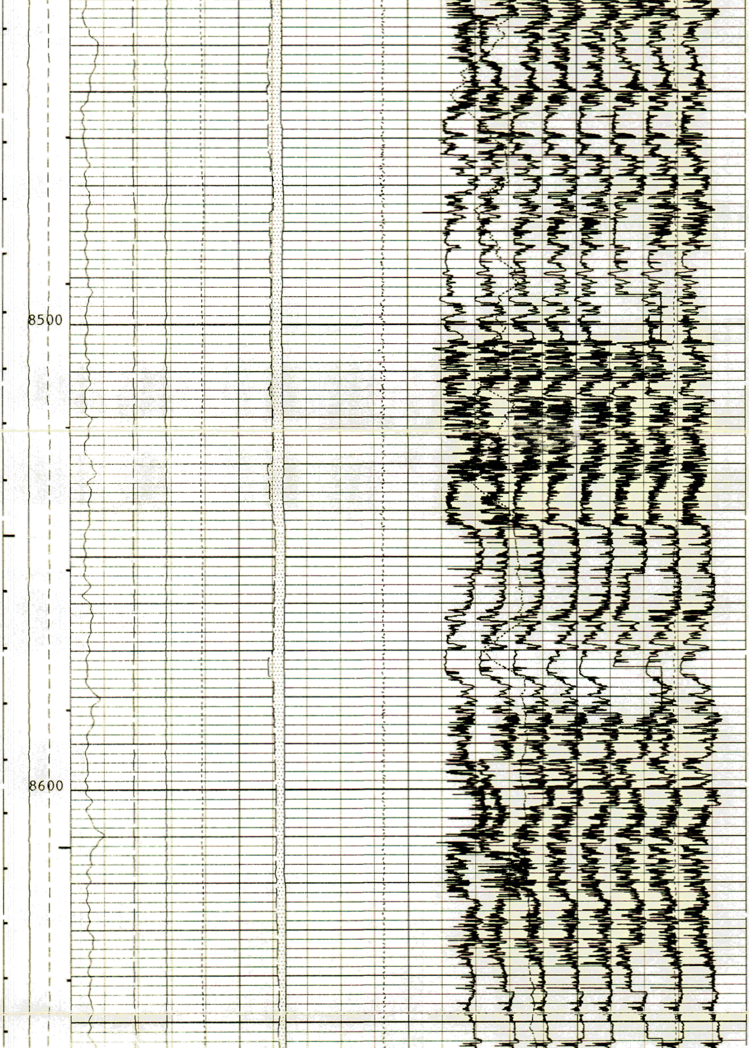


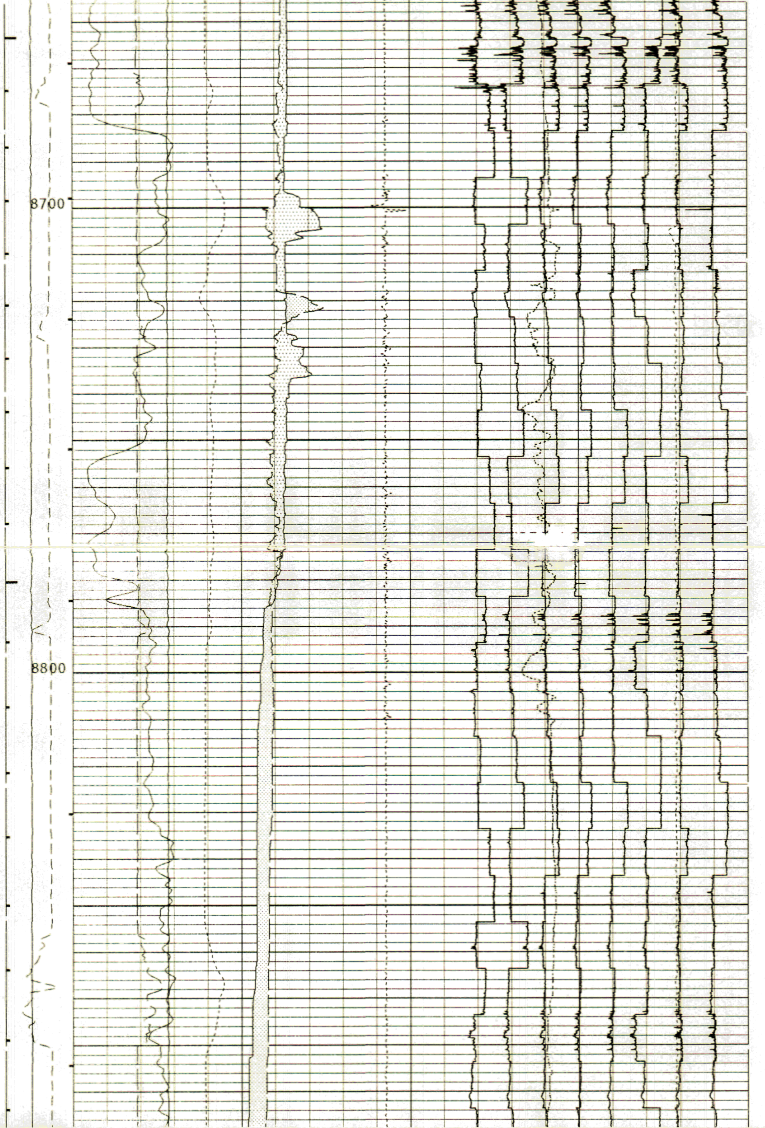


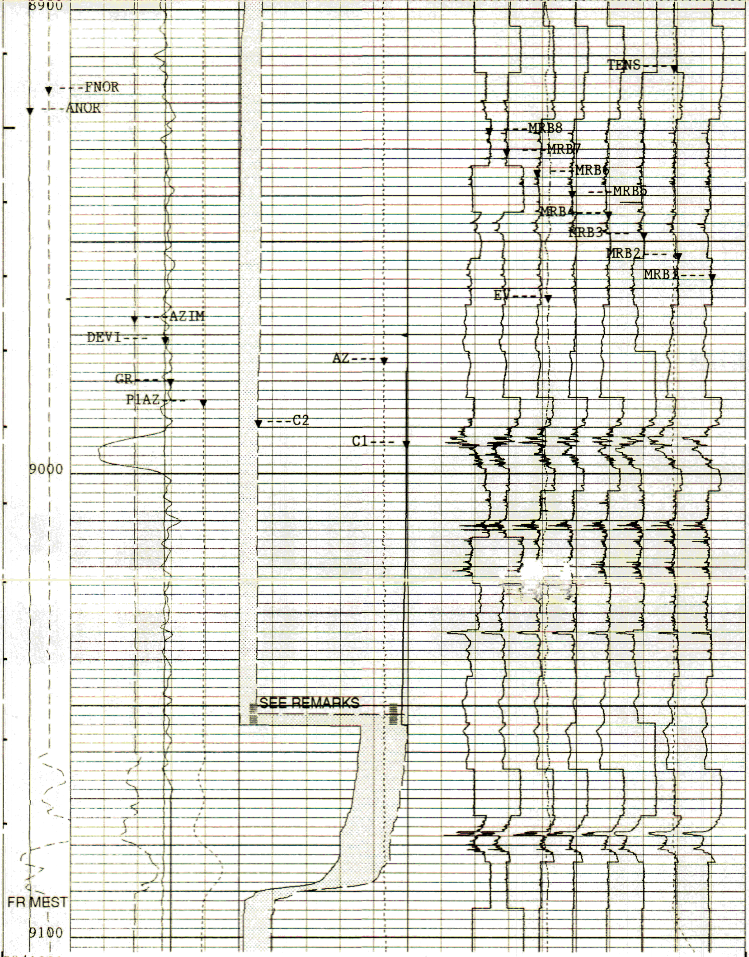












CP 41.004 FILE 5 11-DEC-1995 16:22 (UP)

C2A -- C1A

C1A -- C2A

Curve	Left	Right
FNOR(OER)	.20000	.70000
ANOR(M/S2)	9.0000	11.000

Curve	Left	Right
AZIM(DEG)	-40.00	360.00
DEVI(DEG)	0.0	50.000
GR(GAPI)	0.0	150.00
P1AZ(DEG)	-40.00	360.00

Curve	Left	Right
AZ(M/S2)	0.0	10.000
C2(IN)	6.0000	11.000
C1(IN)	6.0000	11.000

Curve	Left	Right
EV(V)	0.0	5.0000
TENS(LBF)	10000.	0.0
MRB8	-1000.	19000.
MRB7	-3000.	17000.
MRB6	-5000.	15000.
MRB5	-7000.	13000.
MRB4	-9000.	11000.
MRB3	-11000	9000.0
MRB2	-13000	7000.0
MRB1	-15000	5000.0

SENSOR MEASURE POINT TO TOOL ZERO

TENS	-2.9	FEET	GR	30.0	FEET
C2	1.1	FEET	C1	1.1	FEET
MRPD	1.1	FEET	MDRB	1.1	FEET
MRPB	1.1	FEET	MRPC	1.1	FEET
AX	1.1	FEET	MRPA	1.1	FEET
AZ	1.1	FEET	AY	1.1	FEET
FY	1.1	FEET	FX	1.1	FEET
FCAX	1.1	FEET	FZ	1.1	FEET
FCAZ	1.1	FEET	FCAY	1.1	FEET
FTIM	1.1	FEET			

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
PADT	.500000	DEG	NCJT	GSRY	
FCSR	0.1"		AFMO	HAMM	
ICMO	AUTO		MDEC	17.5762	DEG
GLM	DIPM		ICSD	-50000.0	F
RBS	AUTO		PTYP	MEC	
MLM	1800		SOFF	-1.00000	IN
CSR	.6"		ODFO	RAW	
XMOD	AUTO		XGAI	3	
XOFF	0		FCD	9.62500	IN
SPCR	DISA		BS	12.2500	IN
BHS	OPEN				

```
                BEFORE SURVEY CALIBRATION SUMMARY


   PERFORMED:     11-DEC-1995 08:45
   PROGRAM FILE: TDIP    (VERSION    41.004   94/05/03   94/05/03)


 SGTL             DETECTOR CALIBRATION SUMMARY

             MEASURED
           BKGD     JIG          CALIBRATED          UNITS
    GR      22      177             165              GAPI

 BACK: 10-DEC-1995 23:37   JIG: 10-DEC-1995 23:48  COMP: 10-DEC-1995 23:48


 GPIC             CALIBRATION SUMMARY

  MAGNETOMETER MANUFACTURER CODE:                3
  MAGNETOMETER SERIAL NUMBER:                   10
  MAGNETOMETER REFERENCE TEMPERATURE :          20.0   DEGC


 GPIC             CALIBRATION SUMMARY

  ACCELEROMETER MANUFACTURER CODE:               3
  ACCELEROMETER SERIAL NUMBER:                  472
  ACCELEROMETER REFERENCE TEMPERATURE :          20.0   DEGC


 MEST             CALIPER CALIBRATION SUMMARY

             MEASURED                          CALIBRATED
           SMALL    LARGE                  SMALL      LARGE        UNITS
    C1     8.65    12.72                   8.00       12.00         IN
    C2     8.45    12.38                   8.00       12.00         IN

 SMALL: 10-DEC-1995 23:41 LARGE: 10-DEC-1995 23:46 COMP: 10-DEC-1995 23:46

    CP 41.004          FILE    0       11-DEC-1995 08:45
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COMPANY	C. E. EXPLORATION			**SCHL.**	**FR**	9100.0 F
				SCHL.	**TD**	9100.0 F
WELL	NEWBERRY 23-22			**DRLR.**	**TD**	9602.0 F
FIELD	NEWBERRY KGRA			**Elev:**	**KB**	6395.1 F
					DF	6394.1 F
COUNTY	DESCHUTES	**STATE**	OREGON		**GL**	6365.1 F

Schlumberger

FORMATION MICRO-SCANNER MONITOR LOG