COUNTY	COLUMBIA
FIELD	MIST
LOCATION	2208.6'E AND 384.4'N
WELL	SALMON BERRY H.N.R. #24-22-64
COMPANY	NAHAMA AND WEAGANT ENERGY CO.

Schlumberger

DUAL INDUCTION-SFL-SONIC

COMPANY	NAHAMA AND WEAGANT ENERGY CO.		
WELL	SALMON BERRY H.N.R. #24-22-64		
FIELD	MIST		
COUNTY	COLUMBIA	**STATE**	OREGON

LOCATION				Other Services:
2208.6'E AND 384.4'N FROM SW CORNER OF:				DIL/BHC/GR
API SERIAL NO.	**SECT.**	**TWP.**	**RANGE**	
36-009-00312	22	6N	4W	

Permanent Datum	GL	**Elev.**	1107.0 F	**Elev.: K.B.1117.0 F**
Log Measured From	KB	10.0 F	**above Perm. Datum**	**D.F.1116.0 F**
Drilling Measured From	KB			**G.L.1107.0 F**

Date		21-OCT-1993				
Run No.		ONE				
Depth Driller		2553.0 F				
Depth Logger (Schl.)		2547.0 F				
Btm. Log Interval		2541.0 F				
Top Log Interval		502.0 F				
Casing-Driller		8 5/8	@ 502.0 F	@		@
Casing-Logger		502.0 F				
Bit Size		7 7/8	@ 2553.0 F	@		@
Type Fluid in Hole		GEL				
Dens.	**Visc.**	8.90 LB/G	38.0 S			
pH	**Fld. Loss**	7.0	8.0 C3			
Source of Sample		FLOWLINE				
Rm @ Meas. Temp.		4.610 OHMM	@ 64.0 DEGF	@		
Rmf @ Meas. Temp.		2.750 OHMM	@ 60.0 DEGF	@		
Rmc @ Meas. Temp.		3.210 OHMM	@ 60.0 DEGF	@		
Source: Rmf	**Rmc**	MEASURED	MEASURED			
Rm @ BHT		3.597 OHMM	@ 84.0 DEGF	@		
TIME **Circulation Ended**		15:30 21-OCT-93				
TIME **Logger on Bottom**		18:30 21-OCT-93				
Max. Rec. Temp.		84.0 DEGF				
Equip.	**Location**	8504	SACRAMENTO			
Recorded By		M.DEMSKIE				
Witnessed By		B.PINOTTI/R.LUCAS				

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.

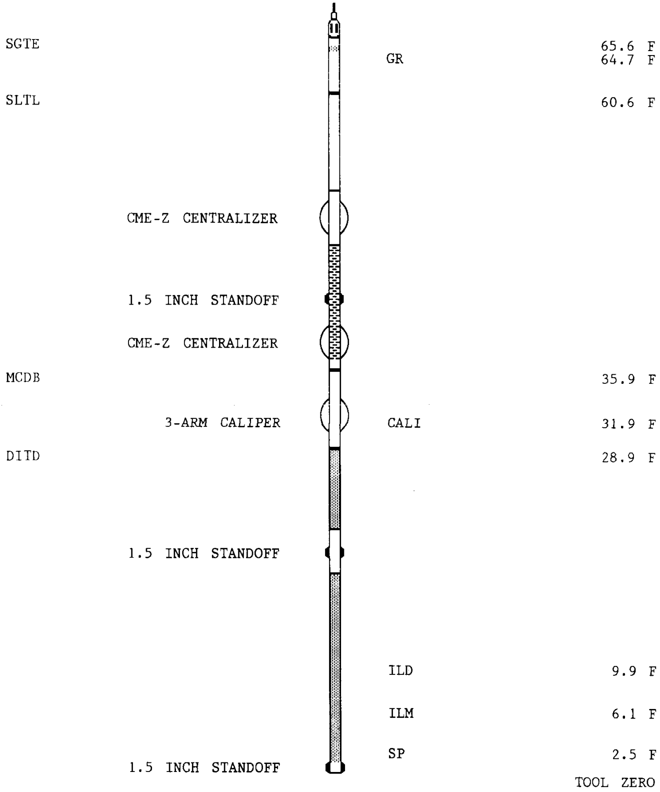
Run No.	ONE	
Service Order No.	624382	
Drilling Fluid Level	5.0 F	
Salinity	400.0 PPM	
Rmf @ BHT	2.025 OHMM @ 84.0 DEGF	@
Rmc @ BHT	2.363 OHMM @ 84.0 DEGF	@
Logging Speed	3600.0 F/HR	
EQUIPMENT DATA		
Tool Number 1	DIS-EC 1422	
Tool Number 2	DIC-DA 1149	
Tool Number 3	MCD-DA 663	
Tool Number 4	SLS-WAC 389	
Tool Number 5	SLC-MA 159	
Tool Number 6	SGC-JC 3206	
Tool Number 7		
Tool Number 8		
Tool Number 9		
Tool Number 10		
Tool Number 11		
Tool Number 12		

REMARKS:

TWO 1.5 INCH STANDOFFS RUN ON DIL
TWO CMEZ CENTRALIZERS RUN ON SONIC

ONE 1.5" STANDOFF RUN ON SONIC

LOGGING TOOL STRING SKETCH



TOTAL TOOL STRING LENGTH IS 68.6 F.
TOTAL TOOL STRING WEIGHT IS 993. LB IN AIR.

MAIN LOG

ACCUMULATED INTEGRATION VALUES SUMMARY:

```
Integrated Hole Volume:    690.891 F3    FROM 2547.00 F    TO 502.000 F
Integrated Cement Volume: 465.029 F3    FROM 2547.00 F    TO 502.000 F
  (ASSUMING 4.50000 IN   O.D. CASING)
Integrated Transit Time:  .280366 S     FROM 2556.00 F    TO 494.500 F
```

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
```

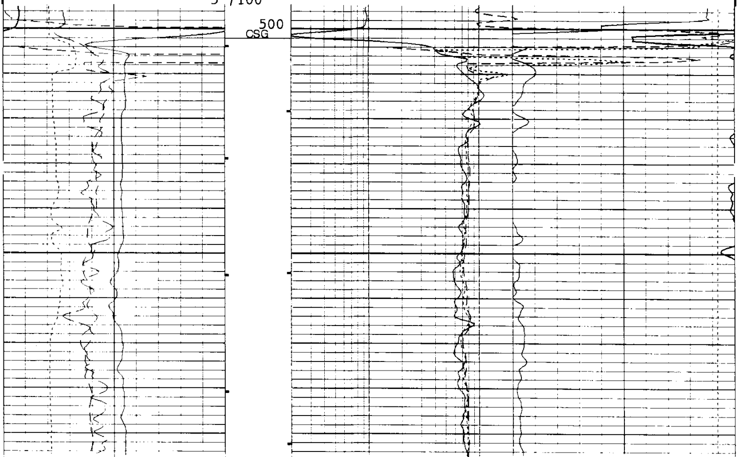
TENS(LBF)
10000. 0.0
DT(US/F)
150.00 50.000

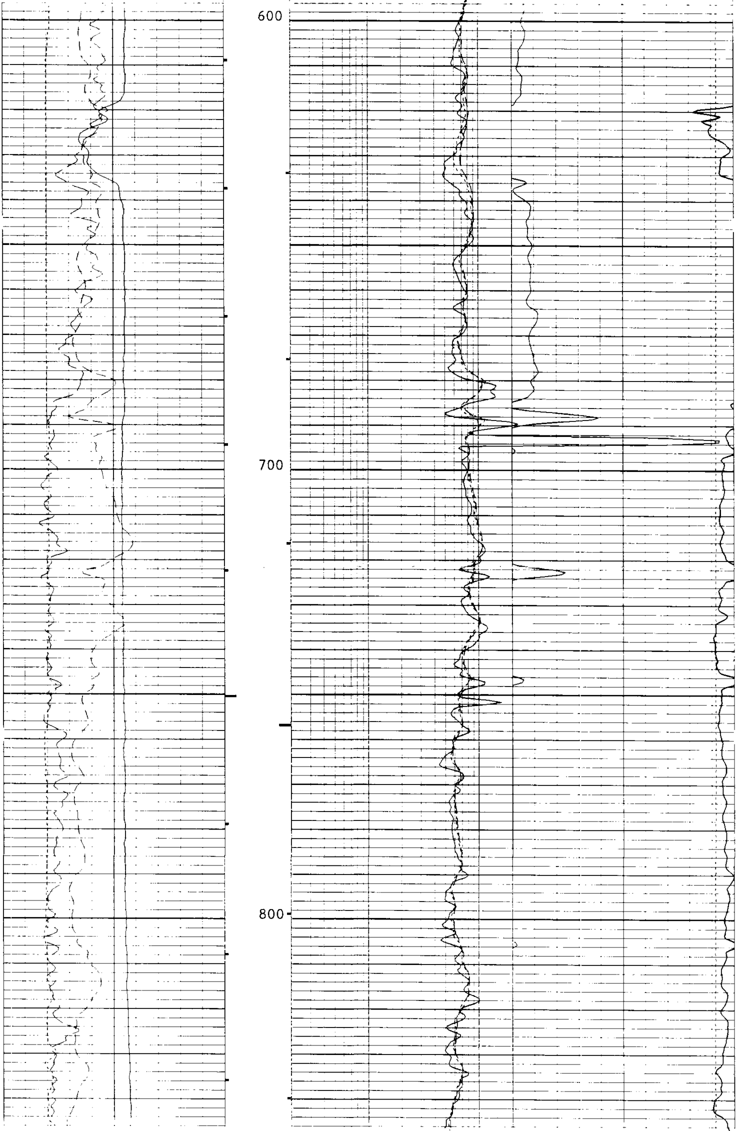
GR(GAPI)
0.0 150.00
SP(MV)
-200.0 0.0
RWA(OHMM)
0.0 3.0000
CALI(IN)
6.0000 16.000

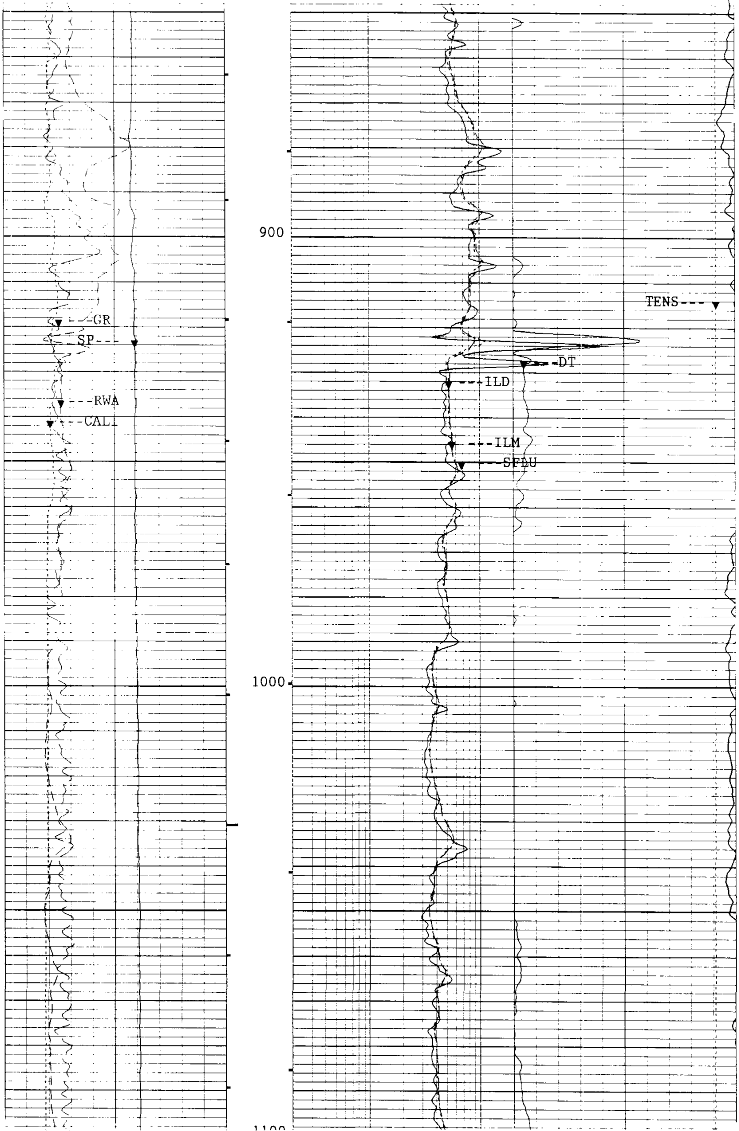
ILD(OHMM)
.20000 2000.0
ILM(OHMM)
.20000 2000.0
SFLU(OHMM)
.20000 2000.0

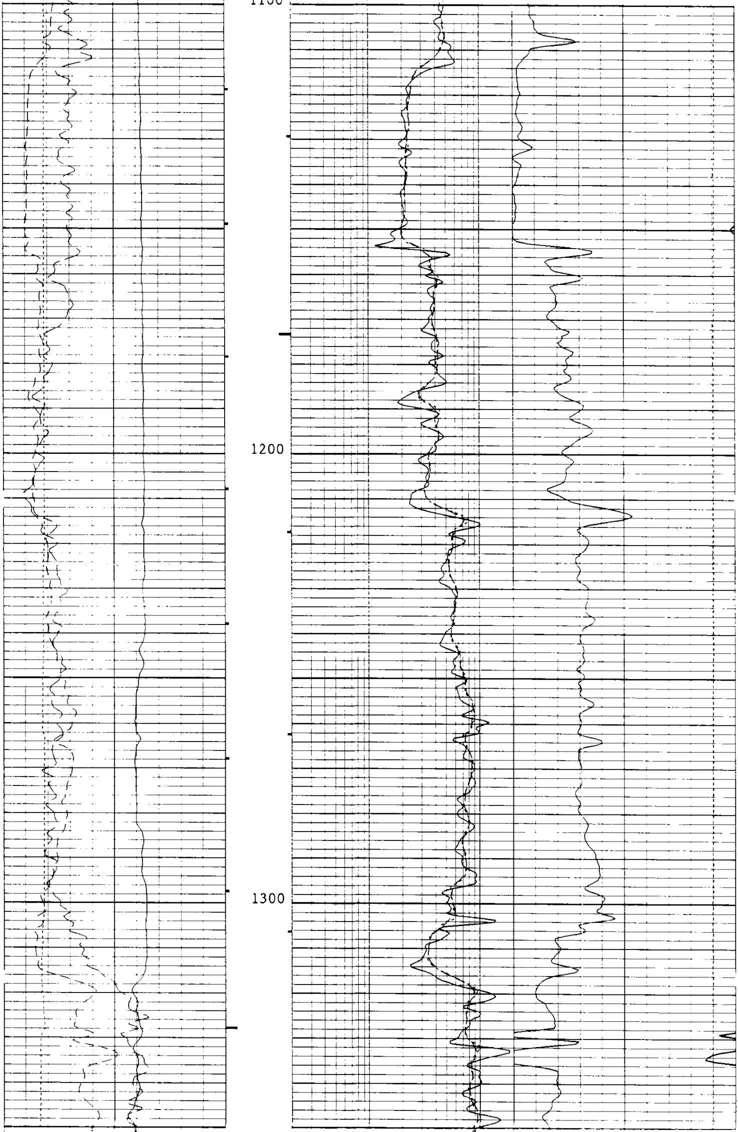
```
CP 38.2            FILE   23       21-OCT-1993 21:51

                   INPUT FILE(S)   CREATION DATE
                        11         21-OCT-1993 18:48
                        20         21-OCT-1993 20:57
```

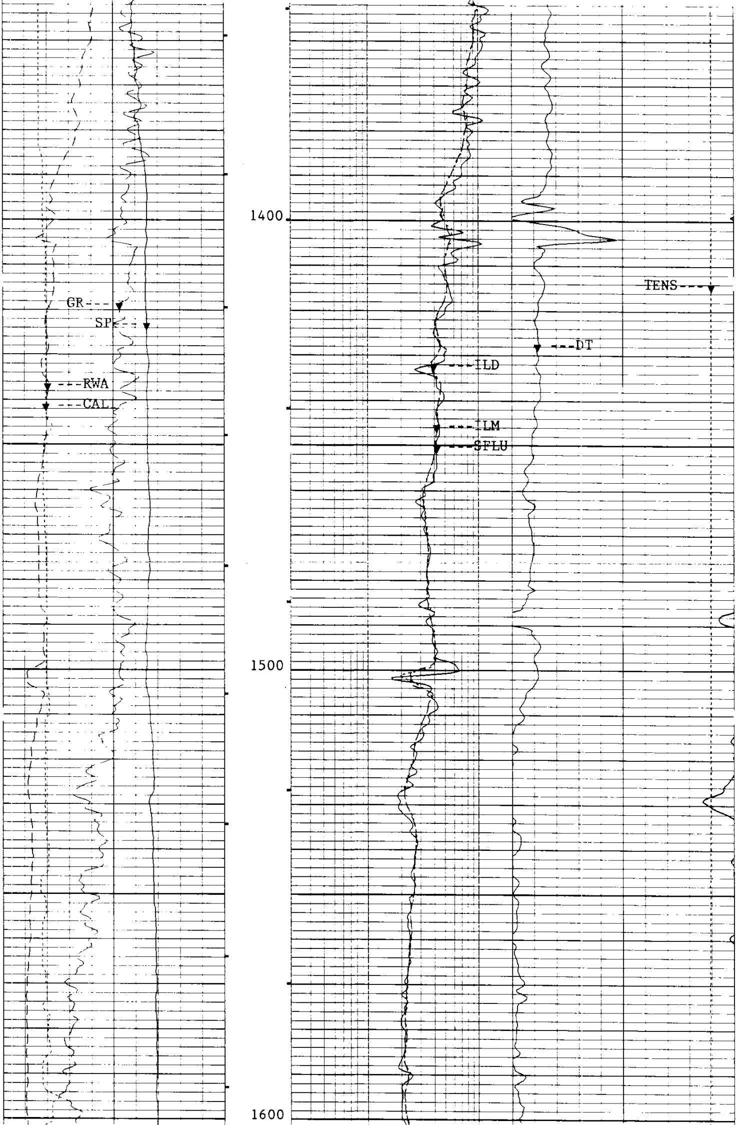
5"/100'

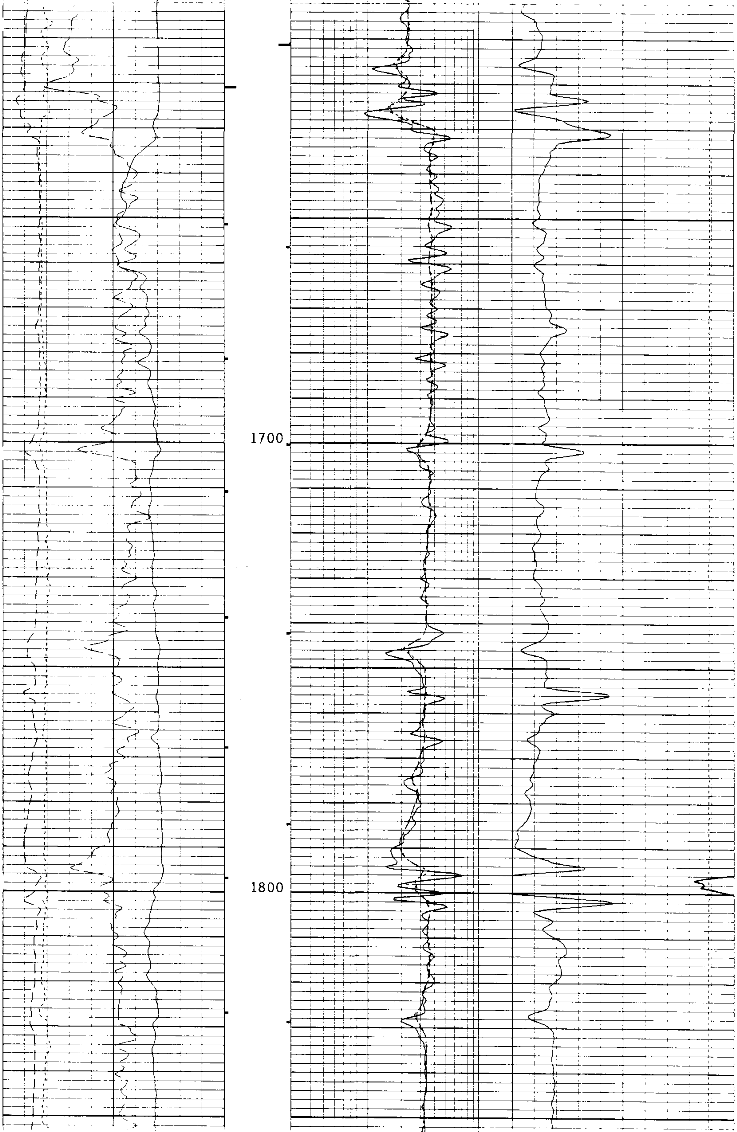


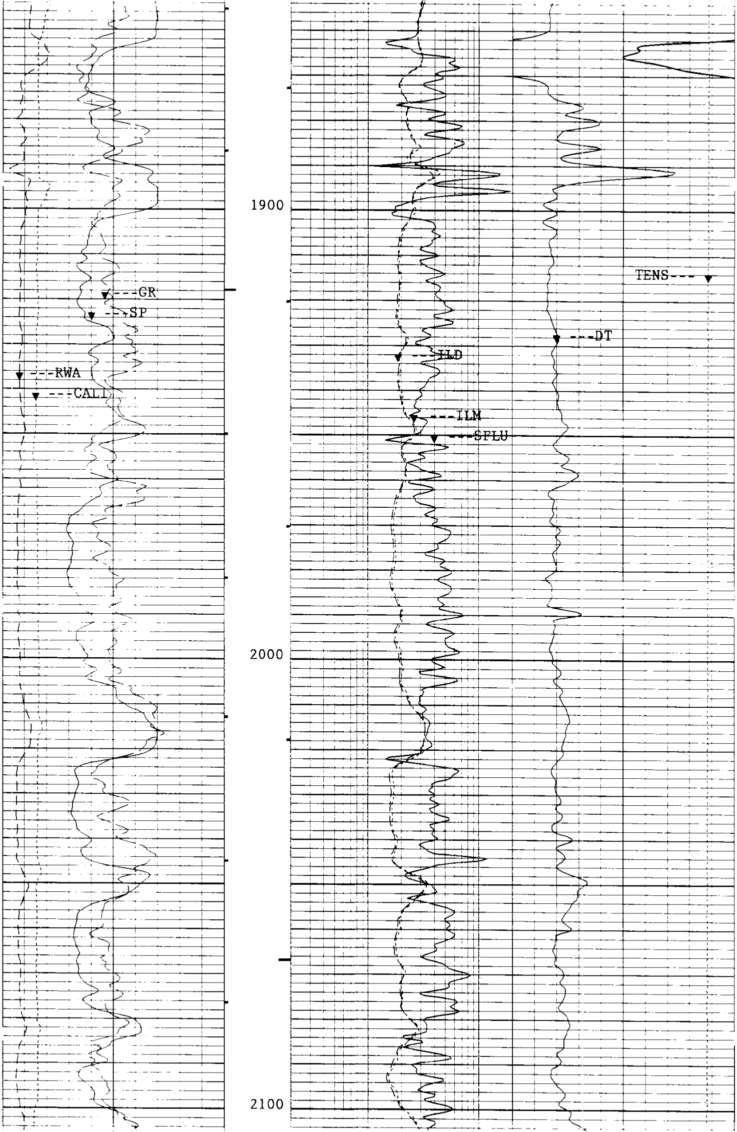


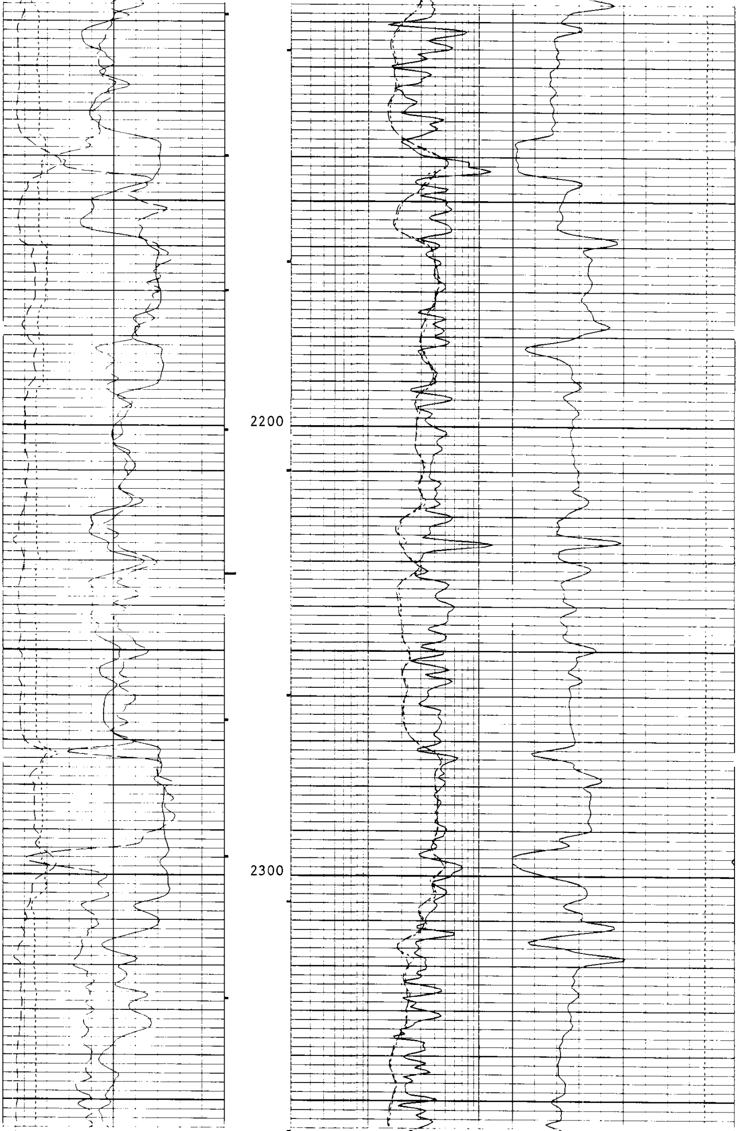


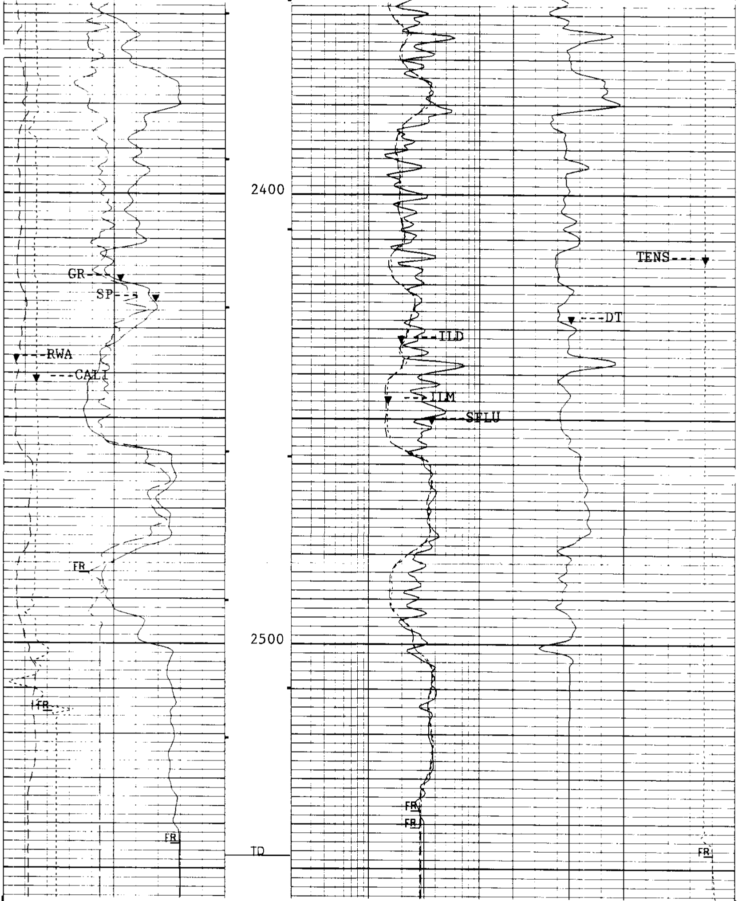












5"/100'

CP 38.2

FILE 23 21-OCT-1993 21:39

INPUT FILE(S) CREATION DATE
11 21-OCT-1993 18:48
20 21-OCT-1993 20:57

TENS(LBF)	
10000.	0.0
DT(US/F)	
150.00	50.000
GR(GAPI)	
0.0	150.00
SP(MV)	
-200 0	0.0
ILD(OHMM)	
20000	2000 0

RWA(OHMM)
0.0 3.0000
CALI(IN)
6.0000 16.000

ILM(OHMM)
.20000 2000.0
SFLU(OHMM)
.20000 2000.0

PARAMETERS

PARAMETER	VALUE	UNIT
SMB - Sonic Memory Board	DISA	
VDLR - Defn not found	2IN	
TOCA - TO Correction Status	DISA	
RATE - Firing Rate	15	HZ
DG - Downhole Gain	AUTO	
DETE - Detection	E2	
NMSG - Near Minimum Sliding Gate	180	US
CBLG - CBL Gate Width	35	US
AMPL - Sonic Amplitude	2	
CBL - Cement Bond Log Amplitude	UT	
WFM - Waveform Mode	1	
SS - Sweep Speed	FAST	
TOD - TO Delay	DISA	
DTF - Delta-T Fluid	189.000	US/F
DTM - Delta-T Matrix	56.0000	US/F
CDTS - Correction for Delta-T Shale, Empirical	100.000	
SPFS - Sonic Porosity Formula Select	R-H	
PP - Playback Processing	RECO	
DO - Depth Offset for Logical Unit LI1	0.0	F
DO2 - Depth Offset for Logical Unit LI2	0.0	F
WMUD - Weight of Mud	8.90000	LB/G
MSEC - Medium Sonde Error Correction	8.00000	MM/M
SBR - Shoulder Bed Resistivity	1.00000	OHMM
DSEC - Deep Sonde Error Correction	6.70000	MM/M
FCD - Future Casing Diameter	4.50000	IN
NCJT - NGT Calibration Jig Type	GSRY	
FPHI - Formation Factor Formula Porosity	SPHI	
DWCO - Digitizer Word Count	512	
DSIN - Digitizer Sample Interval	5	US
DDEL - Digitizing Delay	200	US
BS - Bit Size	7.87500	IN
BHS - BoreHole Status (Open or Cased)	OPEN	

REPEAT SECTION

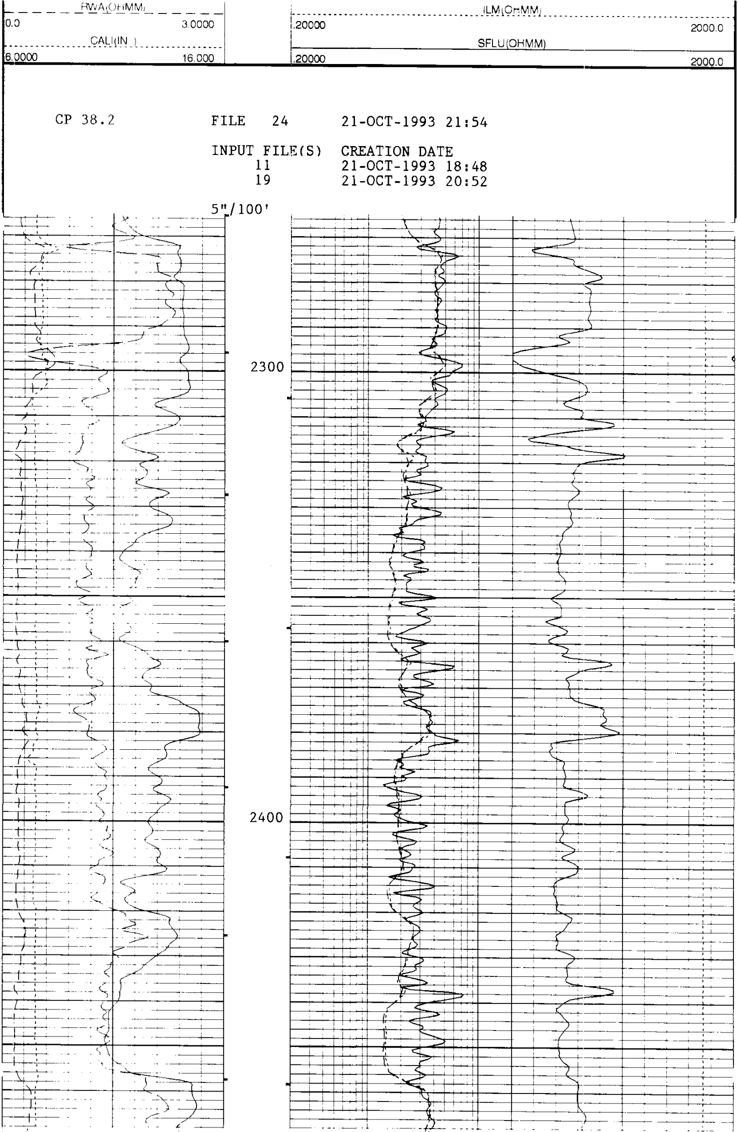
```
ACCUMULATED INTEGRATION VALUES SUMMARY:

Integrated Hole Volume:    90.2353 F3    FROM 2547.00 F    TO 2265.00 F
Integrated Cement Volume: 59.0893 F3     FROM 2547.00 F    TO 2265.00 F
  (ASSUMING 4.50000 IN   O.D. CASING)
Integrated Transit Time:  .0352280 S     FROM 2550.00 F    TO 2265.00 F
```

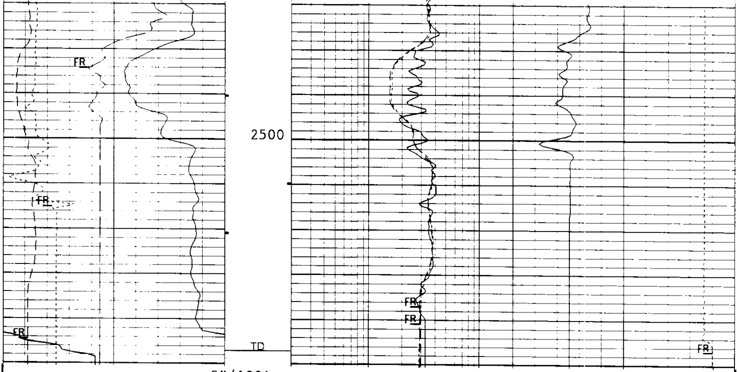
```
EVENT MARK SUMMARY:

OUTPUT                       INTERVAL        DEPTH TRACK
                             BETWEEN PIPS    EDGE

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

GR(GAPI)
0.0 150.00
SP(MV)
-200.0 0.0

TENS(LBF)
10000. 0.0
DT(US/F)
150.00 50.000
ILD(OHMM)
.20000 2000.0

```
CP 38.2          FILE    24       21-OCT-1993 21:54

                 INPUT FILE(S)    CREATION DATE
                       11         21-OCT-1993 18:48
                       19         21-OCT-1993 20:52

                 5"/100'
```





5"/100'

CP 38.2　　FILE 24　　21-OCT-1993 21:52

INPUT FILE(S)	CREATION DATE
11	21-OCT-1993 18:48
19	21-OCT-1993 20:52

TENS(LBF)
10000.　　0.0
DT(US/F)
150.00　　50.000

GR(GAPI)
0.0　　150.00
SP(MV)
-200.0　　0.0
RWA(OHMM)
0.0　　3.0000
CALI(IN)
6.0000　　16.000

ILD(OHMM)
.20000　　2000.0
ILM(OHMM)
.20000　　2000.0
SFLU(OHMM)
.20000　　2000.0

PARAMETERS

PARAMETER	VALUE	UNIT
SMB - Sonic Memory Board	DISA	
VDLR - Defn not found	2IN	
TOCA - TO Correction Status	DISA	
RATE - Firing Rate	15	HZ
DG - Downhole Gain	AUTO	
DETE - Detection	E2	
NMSG - Near Minimum Sliding Gate	180	US
CBLG - CBL Gate Width	35	US
AMPL - Sonic Amplitude	2	
CBL - Cement Bond Log Amplitude	UT	
WFM - Waveform Mode	1	
SS - Sweep Speed	FAST	
TOD - TO Delay	DISA	
DTF - Delta-T Fluid	189.000	US/F
DTM - Delta-T Matrix	56.0000	US/F
CDTS - Correction for Delta-T Shale, Empirical	100.000	
SPFS - Sonic Porosity Formula Select	R-H	

```
PP   - Playback Processing                      RECO
DO   - Depth Offset for Logical Unit LI1        0.0        F
DO2  - Depth Offset for Logical Unit LI2        0.0        F
WMUD - Weight of Mud                            8.90000    LB/G
MSEC - Medium Sonde Error Correction            8.00000    MM/M
SBR  - Shoulder Bed Resistivity                 1.00000    OHMM
DSEC - Deep Sonde Error Correction              6.70000    MM/M
FCD  - Future Casing Diameter                   4.50000    IN
NCJT - NGT Calibration Jig Type                 GSRY
FPHI - Formation Factor Formula Porosity        SPHI
DWCO - Digitizer Word Count                     512
DSIN - Digitizer Sample Interval                5          US
DDEL - Digitizing Delay                         200        US
BS   - Bit Size                                 7.87500    IN
BHS  - BoreHole Status (Open or Cased)          OPEN
```

CALIBRATION SUMMARY

```
                AFTER SURVEY TOOL CHECK SUMMARY


   PERFORMED:     21-OCT-1993 19:29
   PROGRAM FILE: ISN    (VERSION    38.2    92/10/12  92/10/12)


DITD                        TOOL  CHECK

                       ZERO                         PLUS
                BEFORE        AFTER         BEFORE      AFTER     UNITS
    ILD          0.0           -.1          501.3       500.4     MM/M
    ILM          0.0            .1          499.6       498.9     MM/M
    SFL          0.0            .2          500.0       499.1     MM/M

ILD SONDE ERROR CORRECTION :         4.2 MM/M
ILM SONDE ERROR CORRECTION :         6.9 MM/M

BEFORE SURVEY:              ZERO: 21-OCT-1993 18:45  PLUS: 21-OCT-1993 18:46
AFTER SURVEY CHECK:         ZERO: 21-OCT-1993 19:28  PLUS: 21-OCT-1993 19:28

    CP 38.2           FILE   13       21-OCT-1993 19:28



                BEFORE SURVEY CALIBRATION SUMMARY


   PERFORMED:     21-OCT-1993 20:51
   PROGRAM FILE: ISN    (VERSION    38.2    92/10/12  92/10/12)


DITD               ELECTRONICS CALIBRATION SUMMARY

                 MEASURED                      CALIBRATED
               ZERO    PLUS                 ZERO       PLUS          UNITS
    ILD         .16    534.2                0.0        496.4          MM/M
    ILM         .08    523.2                0.0        495.7          MM/M
    SFL         .28    519.8                0.0        500.0          MM/M

ILD SONDE ERROR CORRECTION :         6.7 MM/M
ILM SONDE ERROR CORRECTION :         8.0 MM/M

ZERO: 21-OCT-1993 20:50  PLUS: 21-OCT-1993 20:51  COMP: 21-OCT-1993 20:51
```

```
   CP 38.2              FILE   18       21-OCT-1993 20:51


                    BEFORE SURVEY CALIBRATION SUMMARY


  PERFORMED:    21-OCT-1993 18:47
  PROGRAM FILE: ISN     (VERSION    38.2    92/10/12  92/10/12)


 DITD                ELECTRONICS CALIBRATION SUMMARY

                MEASURED                    CALIBRATED
               ZERO    PLUS               ZERO      PLUS          UNITS
    ILD         .25    513.5              0.0       501.3          MM/M
    ILM         .25    529.9              0.0       499.6          MM/M
    SFL        -.03    512.3              0.0       500.0          MM/M

 ILD SONDE ERROR CORRECTION :        4.2 MM/M
 ILM SONDE ERROR CORRECTION :        6.9 MM/M

 ZERO: 21-OCT-1993 18:45  PLUS: 21-OCT-1993 18:46  COMP: 21-OCT-1993 18:46


 SGTE                DETECTOR CALIBRATION SUMMARY

                MEASURED
               BKGD     JIG         CALIBRATED        UNITS
     GR         30      190            165            GAPI

 BACK: 21-OCT-1993 17:01   JIG: 21-OCT-1993 17:04  COMP: 21-OCT-1993 17:04


 MCDB                CALIPER CALIBRATION SUMMARY

                MEASURED                    CALIBRATED
               SMALL   LARGE              SMALL     LARGE          UNITS
   CALI         7.31    10.47              8.00      12.00           IN

 SMALL: 21-OCT-1993 17:09 LARGE: 21-OCT-1993 17:10 COMP: 21-OCT-1993 17:10

   CP 38.2              FILE   10       21-OCT-1993 18:46



                    SHOP SUMMARY


  PERFORMED:    14-OCT-1993 08:46
  PROGRAM FILE: SHOP    (VERSION    38.2    92/10/12  92/10/12)


 DITD                ELECTRONICS CALIBRATION SUMMARY

                  TEST LOOP CALIBRATION             TOOL CHECK
               MEASURED          CALIBRATED         CALIBRATED
              ZERO     PLUS     ZERO      PLUS      ZERO       PLUS   UNITS
    ILD       -6.3     501.2     0.0      500.0      0.0       496.4   MM/M
    ILM       -8.8     518.8     0.0      500.0      0.0       495.7   MM/M
 ILD  SONDE ERROR CORRECTION :         6.7 MM/M
 ILM  SONDE ERROR CORRECTION :         8.0 MM/M

                      (IS:1342, IC:1422)

   CP 38.2              FILE    2       14-OCT-1993 08:46
```

COMPANY	NAHAMA AND WEAGANT ENERGY CO.			SCHL. FR	2541.0 F
				SCHL. TD	2547.0 F
WELL	SALMON BERRY H.N.R. #24-22-64			DRLR. TD	2553.0 F
FIELD	MIST			Elev: KB	1117.0 F
				DF	1116.0 F
COUNTY	COLUMBIA	**STATE**	OREGON	GL	1107.0 F

Schlumberger

DUAL INDUCTION-SFL-SONIC