COUNTY	Columbia
FIELD	Mist
LOCATION	182E and 118N
WELL	"Kokenee" Libel #32-15-65
COMPANY	Nahama & Weagant Energy Company

Schlumberger

DUAL INDUCTION-SFL-SONIC

COMPANY	Nahama & Weagant Energy Company		
WELL	"Kokenee" Libel #32-15-65		
FIELD	Mist		
COUNTY	Columbia	**STATE**	Oregon

LOCATION				Other Services:
182'E and 118'N from center of section				
API SERIAL NO.	**SECT.**	**TWP.**	**RANGE**	
36-009-00318	15	6N	5W	

Permanent Datum	GL	**Elev.**	525.0 F	**Elev.: K.B.536.0 F**
Log Measured From	KB	11.0 F	**above Perm. Datum**	**D.F.535.0 F**
Drilling Measured From	KB			**G.L.525.0 F**

Date	19-NOV-1993			
Run No.	ONE			
Depth Driller	2835.0 F			
Depth Logger (Schl.)	2832.0 F			
Btm. Log Interval	2826.0 F			
Top Log Interval	505.0 F			
Casing-Driller	8 5/8"	@ 505.0 F	@	@
Casing-Logger	505.0 F			
Bit Size	7 7/8"	@ 2835.0 F	@	@
Type Fluid in Hole	GEL/BENEX/PAC			
Dens. / Visc.	9.80 LB/G	40.0 S		
pH / Fld. Loss	7.0	6.2 C3		
Source of Sample	FLOWLINE			
Rm @ Meas. Temp.	2.100 OHMM	@ 76.0 DEGF	@	
Rmf @ Meas. Temp.	2.250 OHMM	@ 68.0 DEGF	@	
Rmc @ Meas. Temp.	2.000 OHMM	@ 65.0 DEGF	@	
Source: Rmf / Rmc	MEASURED	MEASURED		
Rm @ BHT	1.709 OHMM	@ 95.0 DEGF	@	
TIME Circulation Ended	11:00 19-NOV-1993			
TIME Logger on Bottom	13:07 19-NOV-1993			
Max. Rec. Temp.	95.0 DEGF			
Equip. / Location	8504	SACRAMENTO		
Recorded By	SCOTT PILCH			
Witnessed By	ROB LUCAS / BOB PINOTTI			

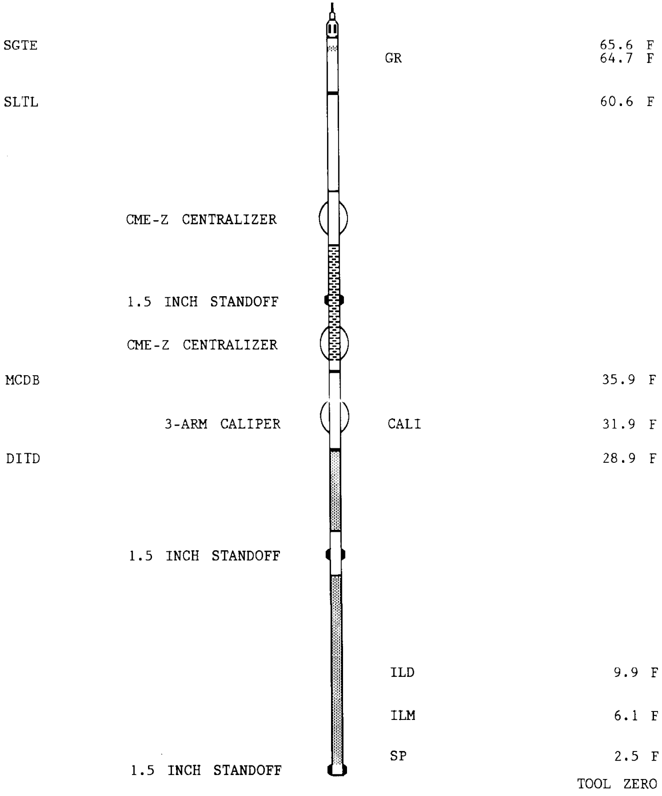
The well name location and borehole reference data were furnished by the customer

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 wilful 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.	624472	
Drilling Fluid Level	5.0 F	
Salinity	720.0 PPM	
Rmf @ BHT	1.654 OHMM @ 95.0 DEGF	@
Rmc @ BHT	1.412 OHMM @ 95.0 DEGF	@
Logging Speed	3600.0 F/HR	
EQUIPMENT DATA		
Tool Number 1	DIS-EC 1386	
Tool Number 2	DIC-DA 1342	
Tool Number 3	MCD-DA 1237	
Tool Number 4	SLS-WC 389	
Tool Number 5	SLC-MA 114	
Tool Number 6	SGC-JC 3204	
Tool Number 7	IEM-BD 304	
Tool Number 8	SLM-DA 428	
Tool Number 9	NLM-BC 207	
Tool Number 10		
Tool Number 11		
Tool Number 12		

REMARKS:

LOGGING TOOL STRING SKETCH



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

Main Log - 5"/100'

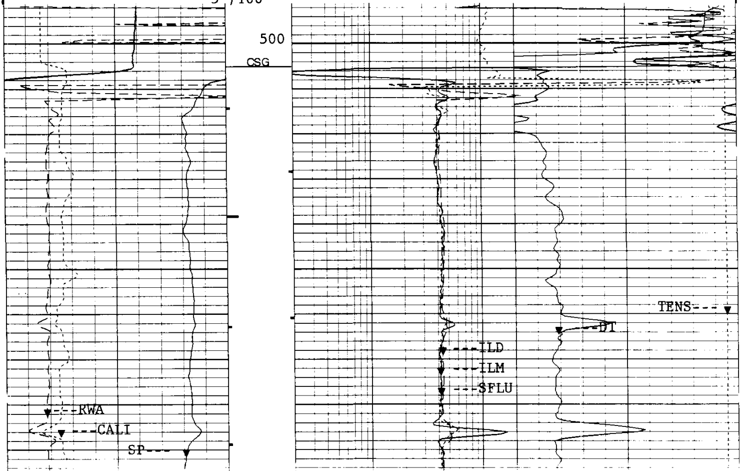
```
ACCUMULATED INTEGRATION VALUES SUMMARY:

Integrated Hole Volume:    714.024 F3     FROM 2832.00 F     TO 505.000 F
Integrated Cement Volume:  457.017 F3     FROM 2832.00 F     TO 505.000 F
  (ASSUMING 4.50000 IN    O.D. CASING)
Integrated Transit Time:   .287604 S      FROM 2832.00 F     TO 505.000 F
```

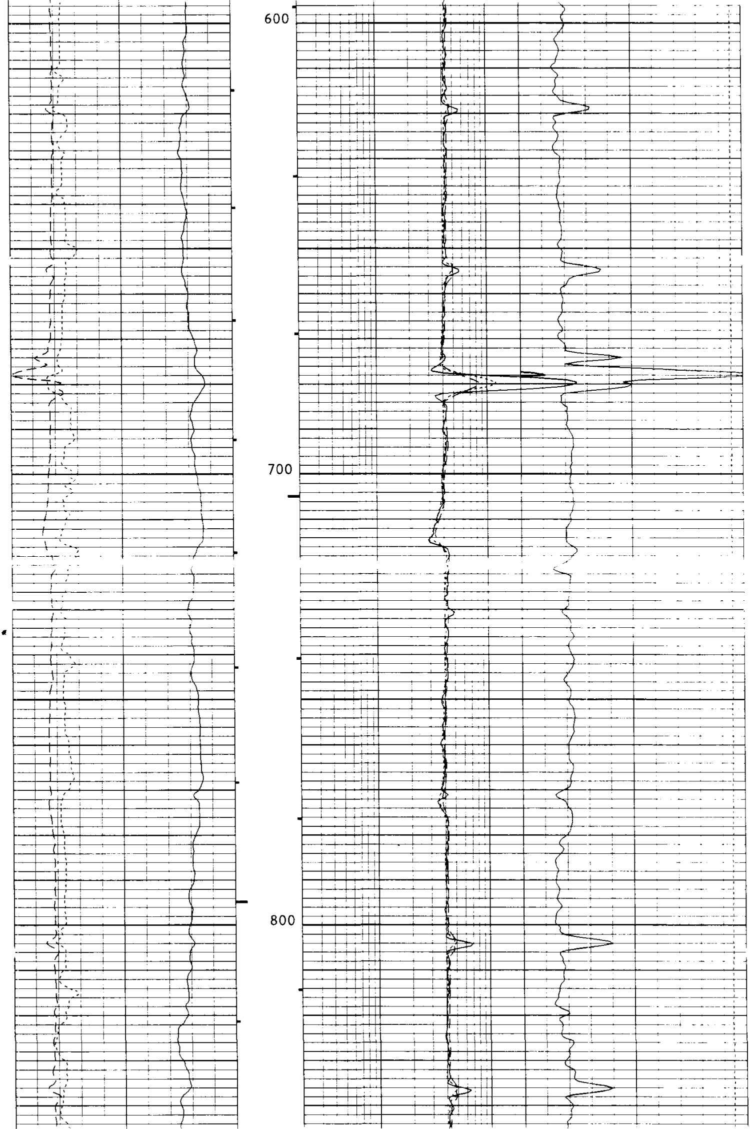
```
EVENT MARK SUMMARY:

OUTPUT                          INTERVAL          DEPTH TRACK
                                BETWEEN PIPS      EDGE

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

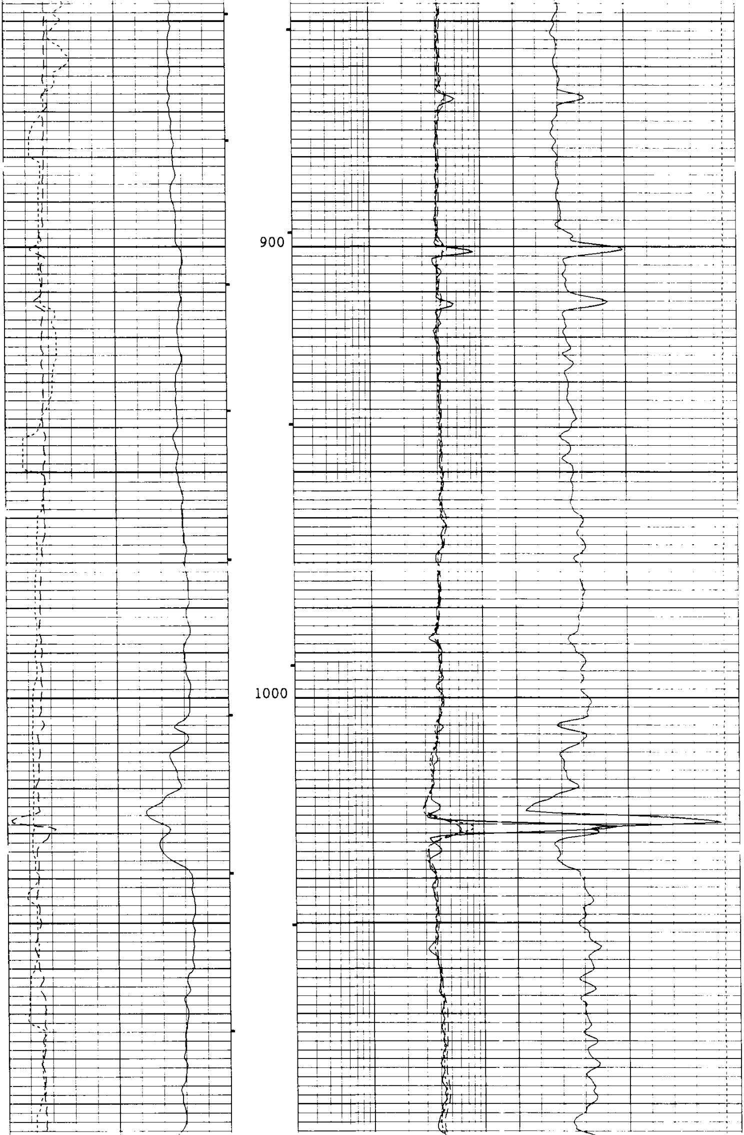
Curve	Left	Right
TENS(LBF)	20500.	500.00
DT(US/F)	150.00	50.000
RWA(OHMM)	0.0	3.0000
CALI(IN)	6.0000	16.000
SP(MV)	-100.0	0.0
ILD(OHMM)	.20000	2000.0
ILM(OHMM)	.20000	2000.0
SFLU(OHMM)	.20000	2000.0

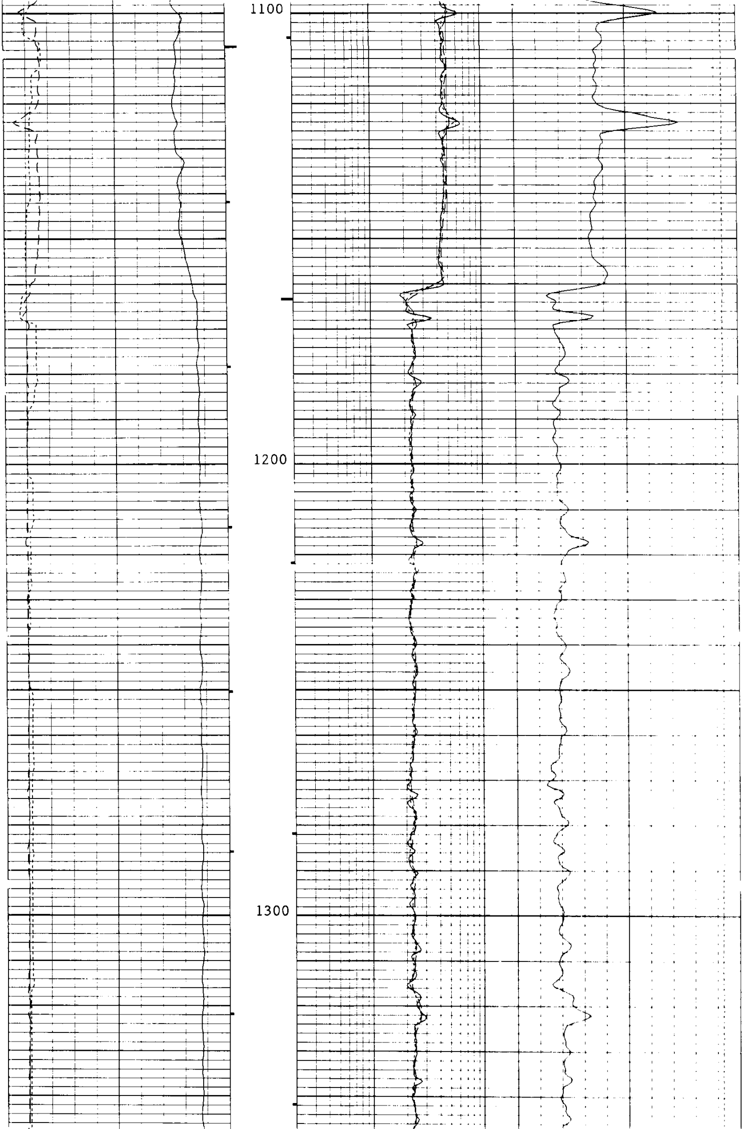
```
CP 38.2          FILE    15       19-NOV-1993 14:21

                 INPUT FILE(S)    CREATION DATE
                       12         19-NOV-1993 13:01
```

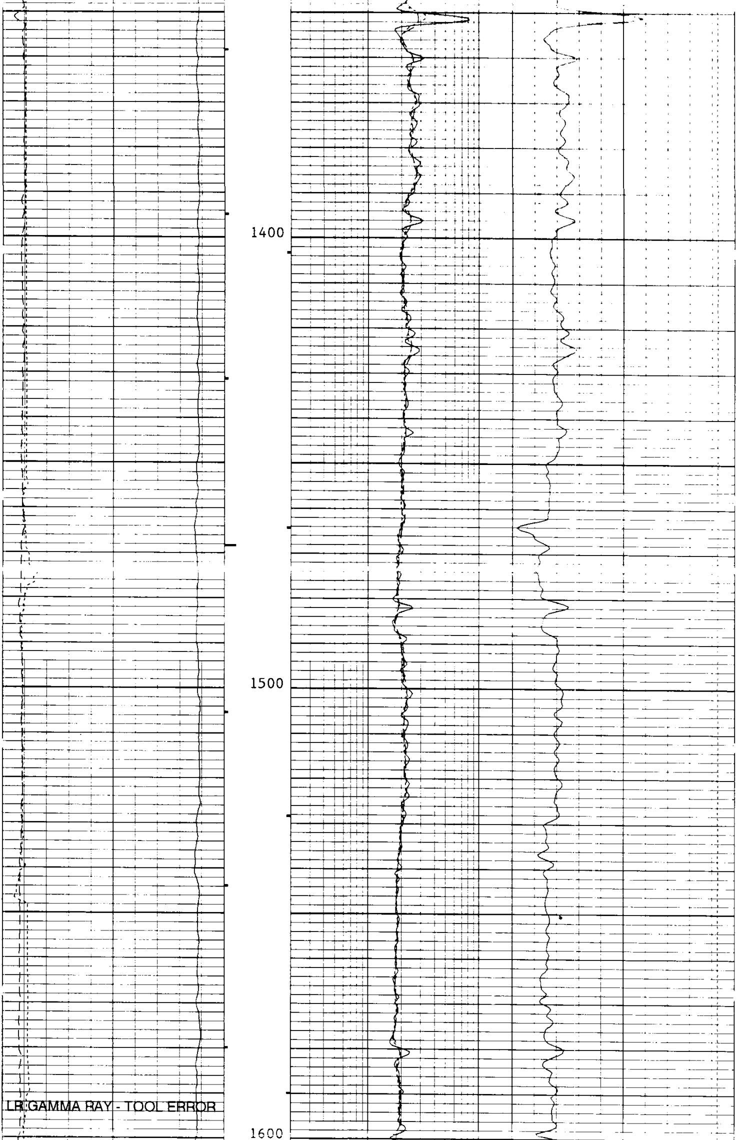
5"/100'

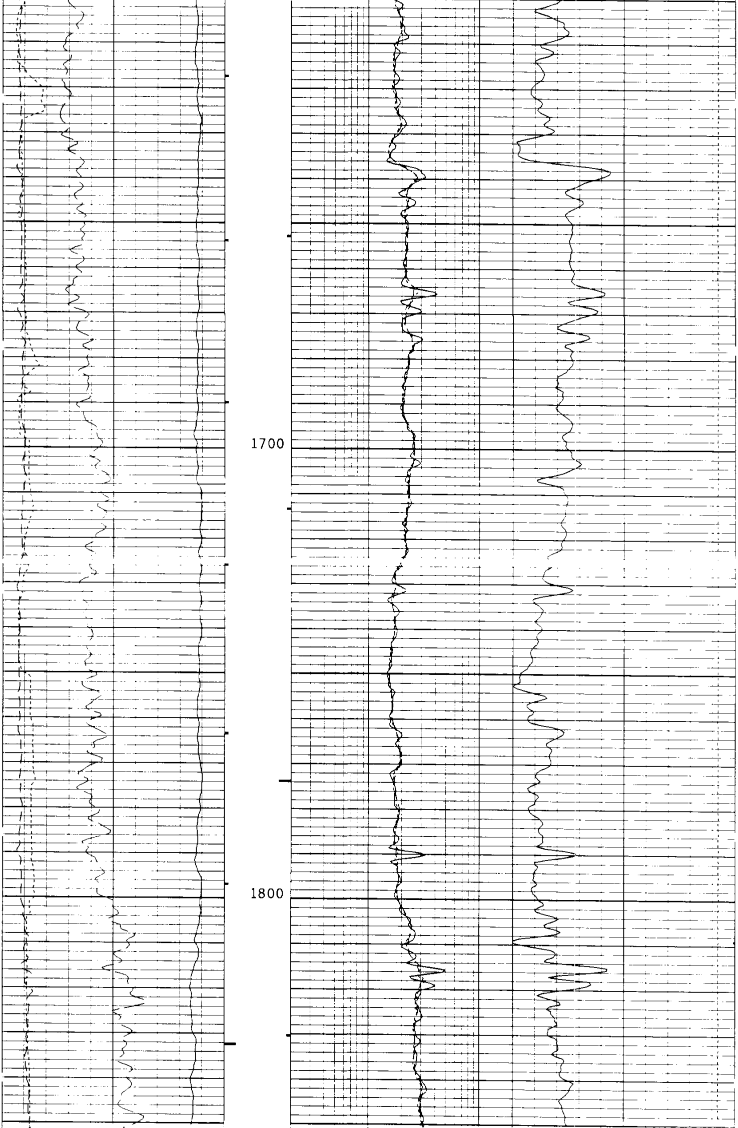


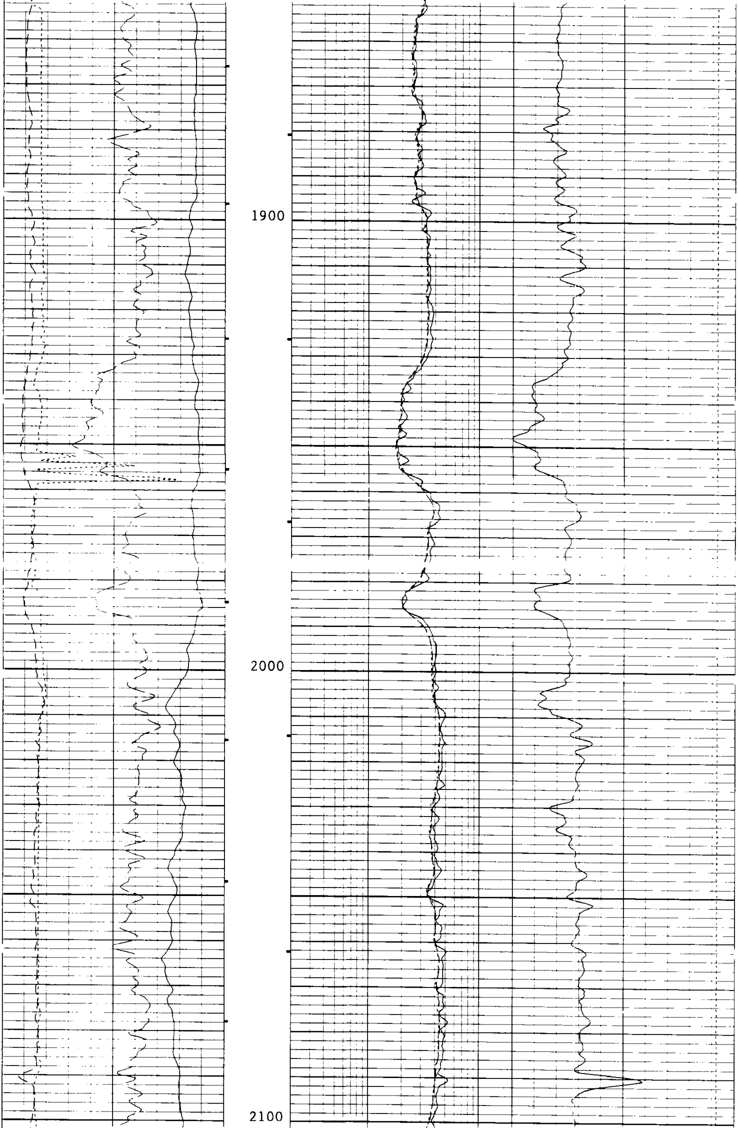


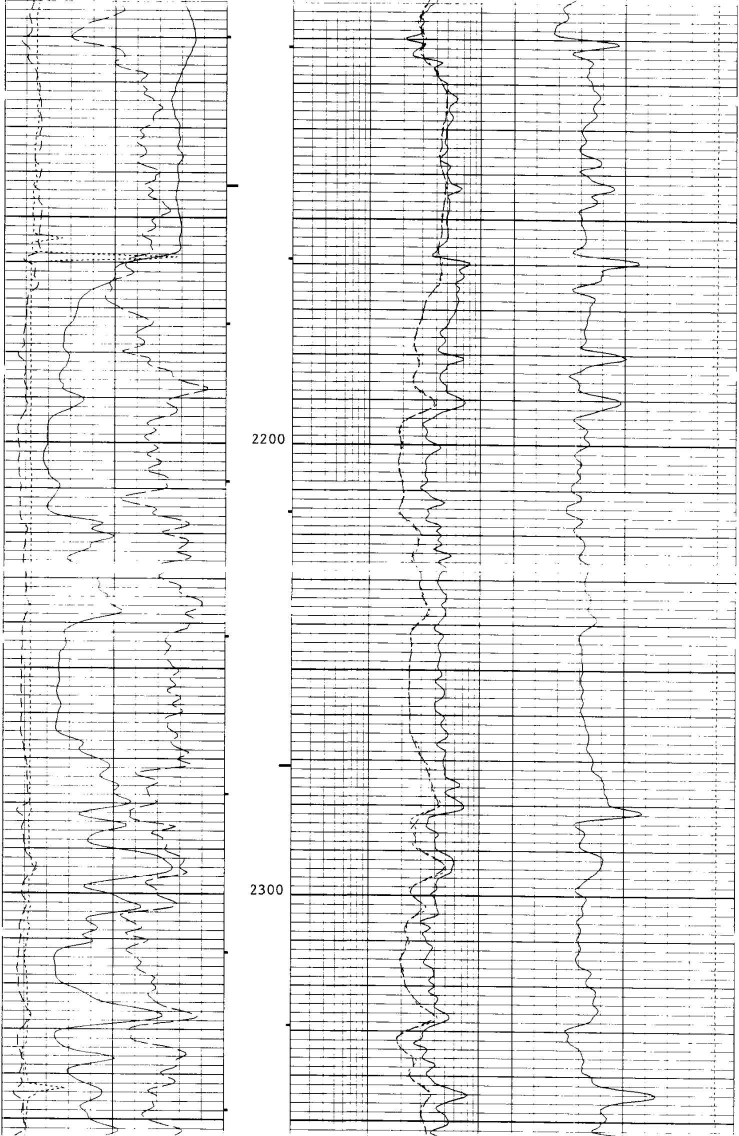


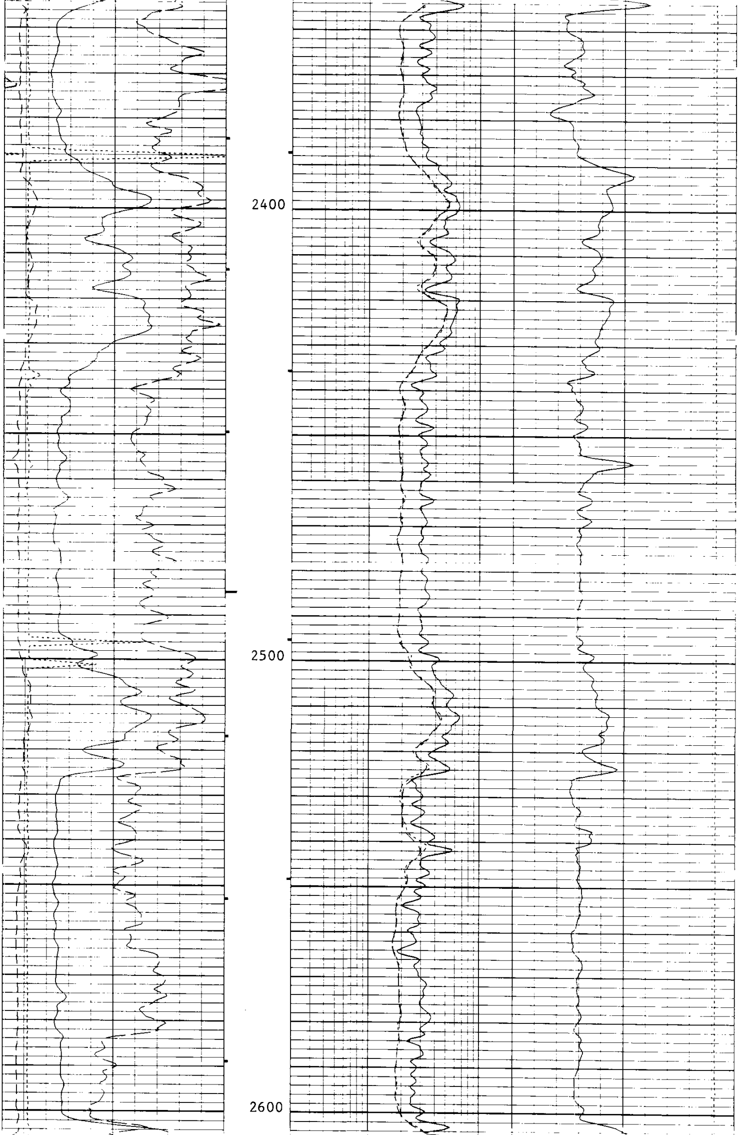


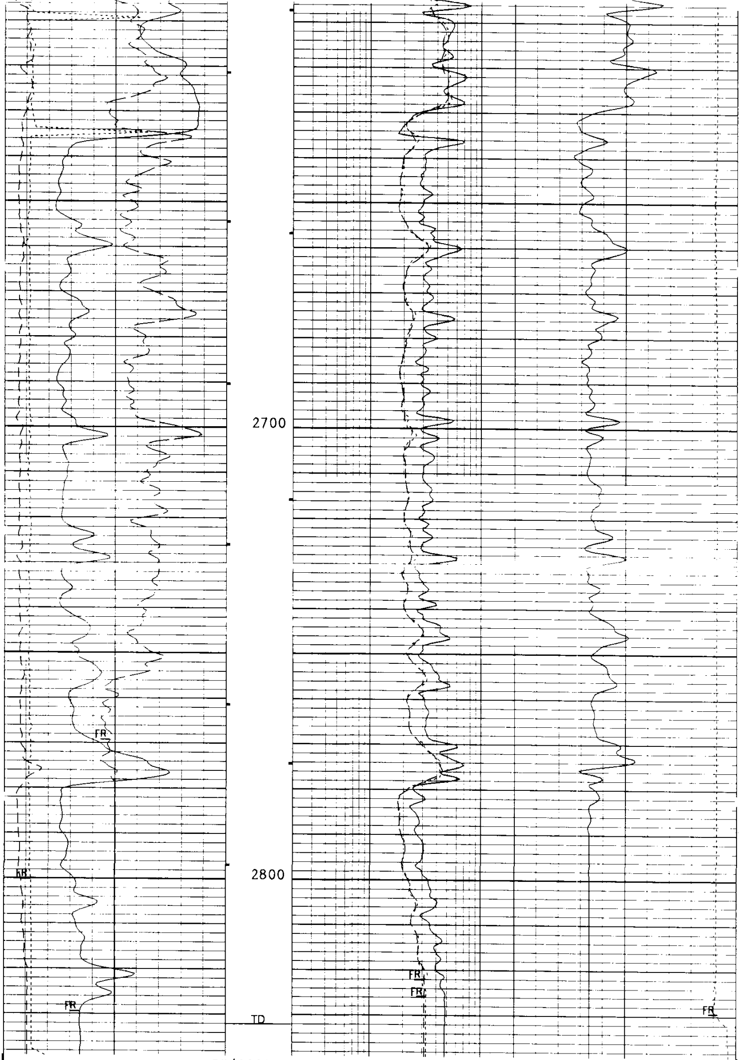












5"/100'

CP 38.2 FILE 15 19-NOV-1993 14:11

INPUT FILE(S)	CREATION DATE
12	19-NOV-1993 13:01

Curve	Left	Right
RWA(OHMM)	0.0	3.0000
CALI(IN)	6.0000	16.000
GR(GAPI)	0.0	150.00
SP(MV)	-100.0	0.0

Curve	Left	Right
TENS(LBF)	20500.	500.00
DT(US/F)	150.00	50.000
ILD(OHMM)	.20000	2000.0
ILM(OHMM)	.20000	2000.0
SFLU(OHMM)	.20000	2000.0

SENSOR MEASURE POINT TO TOOL ZERO

MCDB 31.9 FEET
DTT 2.5 FEET
SLTQ 44.1 FEET
SGTE 62.7 FEET
DITD 9.9 FEET

PARAMETERS

PARAMETER	VALUE	UNIT
SMB - Sonic Memory Board	DISA	
VDLR - Defn not found	2IN	
TOCA - T0 Correction Status	DISA	
RATE - Firing Rate	15	HZ
DG - Downhole Gain	/5	
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 - T0 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	NORM	
DO - Depth Offset for Logical Unit LI1	0.0	F
WMUD - Weight of Mud	9.80000	LB/G
MSEC - Medium Sonde Error Correction	7.60000	MM/M
SBR - Shoulder Bed Resistivity	1.00000	OHMM
DSEC - Deep Sonde Error Correction	6.20000	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	

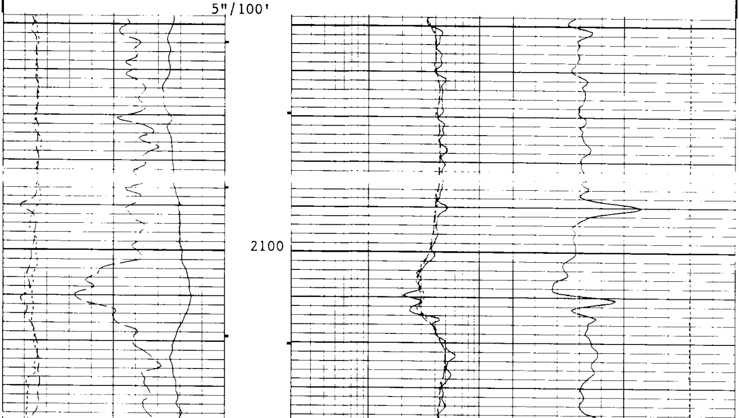
Repeat Section - 5"/100'

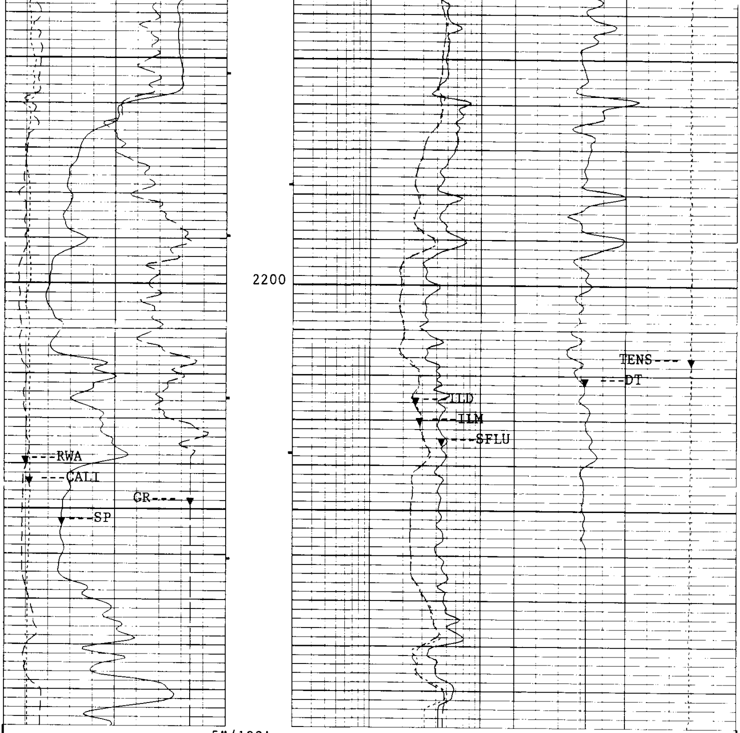
```
ACCUMULATED INTEGRATION VALUES SUMMARY:

Integrated Hole Volume:    72.1284 F3    FROM 2298.00 F    TO 2047.50 F
Integrated Cement Volume: 44.5167 F3    FROM 2298.00 F    TO 2047.50 F
  (ASSUMING 4.50000 IN   O.D. CASING)
Integrated Transit Time:  .0293265 S    FROM 2298.00 F    TO 2047.50 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
```

RWA(OHMM)	0.0	3.0000
CALI(IN)	6.0000	16.000
GR(GAPI)	0.0	150.00
SP(MV)	-100.0	0.0
TENS(LBF)	10000.	0.0
DT(US/F)	150.00	50.000
ILD(OHMM)	.20000	2000.0
ILM(OHMM)	.20000	2000.0
SFLU(OHMM)	.20000	2000.0

CP 38.2   FILE 11   19-NOV-1993 13:01   (UP)





5"/100'

CP 38.2 FILE 11 19-NOV-1993 12:56 (UP)

TENS(LBF)	10000	0.0
DT(US/F)	150.00	50.000
RWA(OHMM)	0.0	3.0000
CALI(IN)	6.0000	16.000
GR(GAPI)	0.0	150.00
SP(MV)	-100.0	0.0
ILD(OHMM)	.20000	2000.0
ILM(OHMM)	.20000	2000.0
SFLU(OHMM)	.20000	2000.0

Calibration Summary

```
               AFTER SURVEY TOOL CHECK SUMMARY


  PERFORMED:    19-NOV-1993 13:48
  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          .3        494.9      493.4    MM/M
   ILM        0.0         -.0        500.5      498.9    MM/M
   SFL        0.0         -.1        500.0      485.4    MM/M

ILD SONDE ERROR CORRECTION :       6.2 MM/M
ILM SONDE ERROR CORRECTION :       7.6 MM/M

BEFORE SURVEY:           ZERO: 19-NOV-1993 12:48  PLUS: 19-NOV-1993 12:48
AFTER SURVEY CHECK:      ZERO: 19-NOV-1993 13:47  PLUS: 19-NOV-1993 13:47

   CP 38.2           FILE   14      19-NOV-1993 13:47


               BEFORE SURVEY CALIBRATION SUMMARY


  PERFORMED:    19-NOV-1993 12:49
  PROGRAM FILE: ISN    (VERSION    38.2    92/10/12  92/10/12)


DITD            ELECTRONICS CALIBRATION SUMMARY

             MEASURED                CALIBRATED
           ZERO    PLUS              ZERO      PLUS        UNITS
   ILD     -.11   539.9              0.0     494.9         MM/M
   ILM     -.00   526.6              0.0     500.5         MM/M
   SFL      .22   525.8              0.0     500.0         MM/M

ILD SONDE ERROR CORRECTION :       6.2 MM/M
ILM SONDE ERROR CORRECTION :       7.6 MM/M

ZERO: 19-NOV-1993 12:48  PLUS: 19-NOV-1993 12:48  COMP: 19-NOV-1993 12:49


SGTE            DETECTOR CALIBRATION SUMMARY

             MEASURED
           BKGD    JIG        CALIBRATED         UNITS
    GR      51     204            165            GAPI

BACK: 19-NOV-1993 11:54   JIG: 19-NOV-1993 11:57  COMP: 19-NOV-1993 11:57


MCDB            CALIPER CALIBRATION SUMMARY

             MEASURED                CALIBRATED
           SMALL   LARGE             SMALL     LARGE       UNITS
  CALI     7.01   10.35              8.00     12.00         IN
```

```
SMALL: 19-NOV-1993 11:50 LARGE: 19-NOV-1993 11:51 COMP: 19-NOV-1993 11:51

   CP 38.2           FILE    9       19-NOV-1993 12:49



                 SHOP SUMMARY


  PERFORMED:     16-NOV-1993 12:54
  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     -6.5     537.9     0.0       500.0     0.0        494.9  MM/M
   ILM     -8.6     517.8     0.0       500.0     0.0        500.5  MM/M
ILD   SONDE ERROR CORRECTION :         6.2 MM/M
ILM   SONDE ERROR CORRECTION :         7.6 MM/M

                      (IS:1386, IC:1342)

   CP 38.2           FILE    4       16-NOV-1993 12:54
```

COMPANY	Nahama & Weagant Energy Company			SCHL.	FR	2826.0 F
				SCHL.	TD	2832.0 F
WELL	"Kokenee" Libel #32-15-65			DRLR.	TD	2835.0 F
				Elev:	KB	536.0 F
FIELD	Mist				DF	535.0 F
COUNTY	Columbia	**STATE**	Oregon		GL	525.0 F

Schlumberger

DUAL INDUCTION-SFL-SONIC