Schlumberger

DUAL INDUCTION-SFL-SONIC

COUNTY	COLUMBIA
FIELD	MIST
LOCATION	1780 S AND 290 E
WELL	Buzzard #12 35 65
COMPANY	Nahama & Weagant Energy Co

COMPANY Nahama & Weagant Energy Co.

LF B

WELL "Buzzard" #12-35-65

FIELD MIST

COUNTY COLUMBIA **STATE** OREGON

SCANNED

LOCATION
1780'S AND 290'E
FROM NW CORNER

Other Services:
DIL-BHC GR
FMS

API SERIAL NO.	SECT.	TWP.	RANGE
36-009-00301	35	6N	5W

Permanent Datum	GL	Elev.	800.0 F	Elev.: K.B.810.0 F
Log Measured From	KB	10.0 F	above Perm. Datum	D.F.809.0 F
Drilling Measured From	KB			G.L.800.0 F

Date	09-JUN-1993					
Run No.	ONE					
Depth Driller	3727.0 F					
Depth Logger (Schl.)	3726.0 F					
Btm. Log Interval	3720.0 F					
Top Log Interval	501.0 F					
Casing-Driller	8 5/8"	@ 500.0 F	4 1/2	@ 4793.0 F		@
Casing-Logger	501.0 F					
Bit Size	7 7/8"	@ 3727.0 F		@		@
Type Fluid in Hole	DRISPAC/POLYMER					
Dens. | Visc.	9.70 LB/G	39.0 S				
pH | Fld. Loss	8.0	6.2 C3				
Source of Sample	FLOWLINE					
Rm @ Meas. Temp.	3.110 OHMM	@ 64.0 DEGF		@		
Rmf @ Meas. Temp.	3.070 OHMM	@ 60.0 DEGF		@		
Rmc @ Meas. Temp.	3.160 OHMM	@ 60.0 DEGF		@		
Source: Rmf | Rmc	MEASURED	MEASURED				
Rm @ BHT	2.165 OHMM	@ 95.0 DEGF		@		
TIME Circulation Ended	10:00 09-JUN-1993					
TIME Logger on Bottom	15:56 09-JUN-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

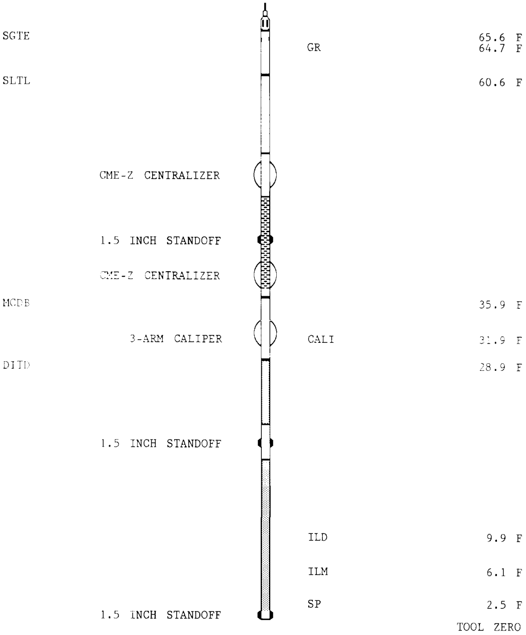
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation 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.	62445*		
Drilling Fluid Level	5.0 F		
Salinity	800.0 PPM		
Rmf @ BHT	2.017 OHMM @ 95.0 DEGF	@	
Rmc @ BHT	2.076 OHMM @ 95.0 DEGF	@	
Logging Speed	3600.0 F/HR		
EQUIPMENT DATA			
Tool Number 1	DIS-EC 1342		
Tool Number 2	DIC-DA 1386		
Tool Number 3	MCD-DA 668		
Tool Number 4	SLC-MA 88		
Tool Number 5	SLS-WC 1335		
Tool Number 6	SGC-JC 3206		
Tool Number 7	IEM-BD 304		
Tool Number 8	SLM-DA 443		
Tool Number 9	NLM-BC 418		
Tool Number 10			
Tool Number 11			
Tool Number 12			

REMARKS:

REPEAT SECTION CHOSEN BY CLIENT.

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: 1123.08 F3 FROM 3726.00 F TO 501.000 F
Integrated Cement Volume: 766.887 F3 FROM 3726.00 F TO 501.000 F
(ASSUMING 4.50000 IN O.D. CASING)
Integrated Transit Time: .378818 S FROM 3726.00 F TO 501.000 F

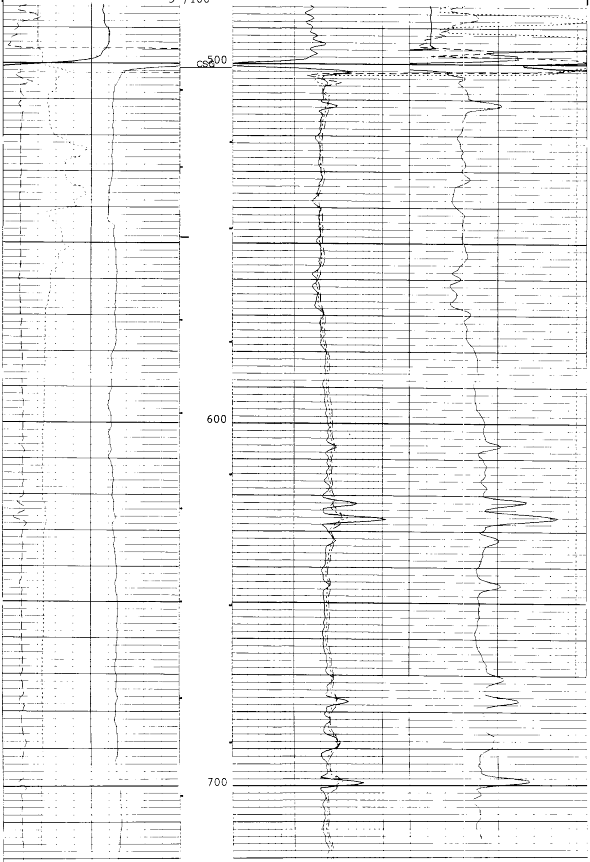
EVENT MARK SUMMARY:

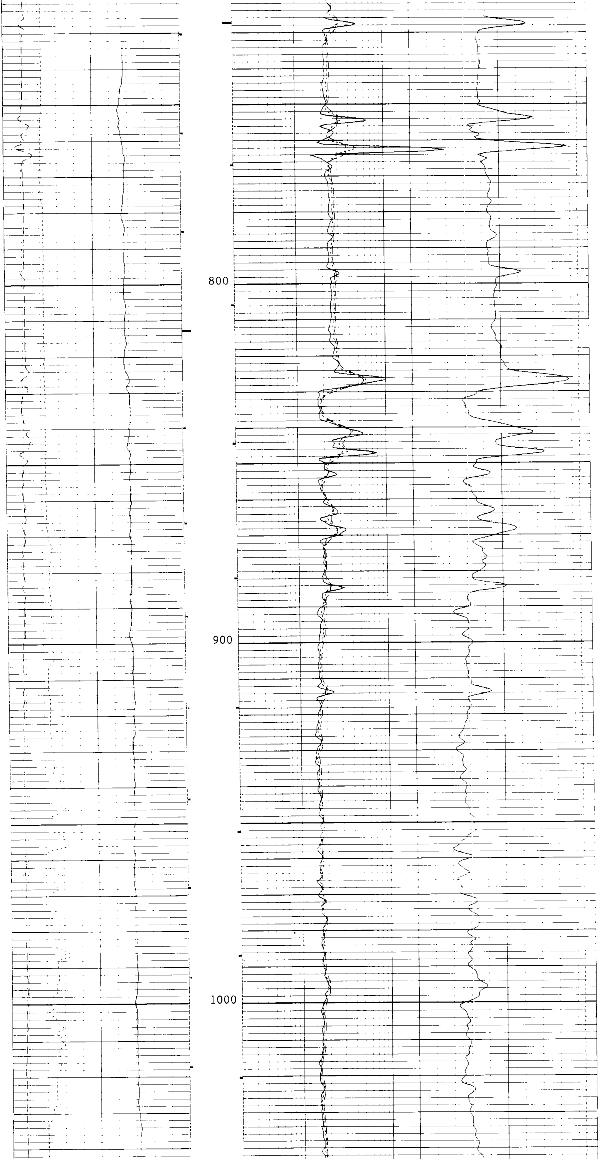
OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK EDGE
Integrated Hole Volume	10.0000 F3	LEFT EDGE
Integrated Cement Volume	10.0000 F3	RIGHT EDGE

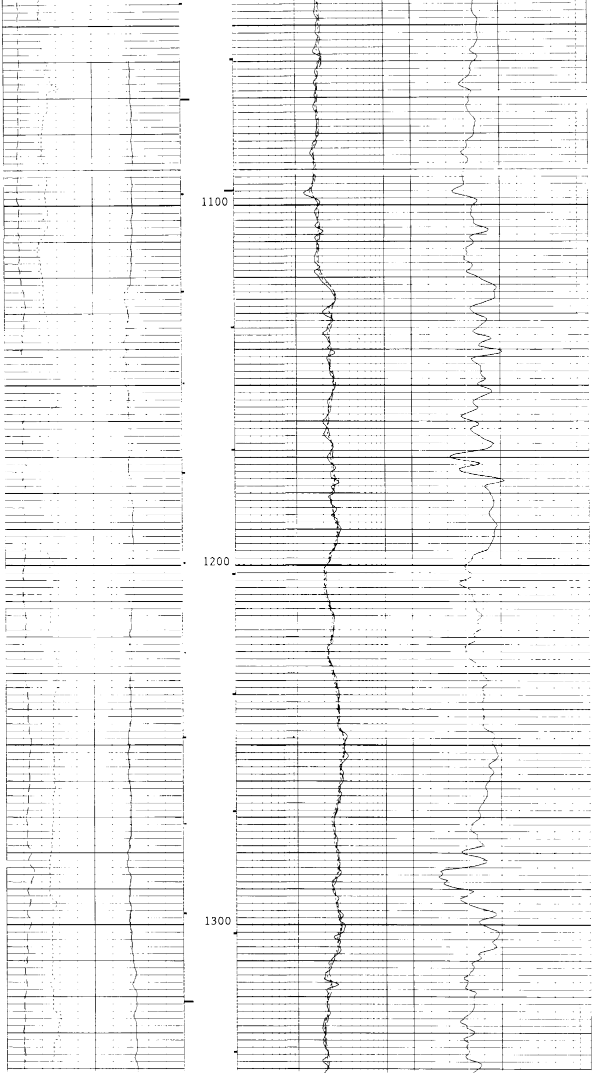
CP 38.2 FILE 3 09-JUN-1993 17:00

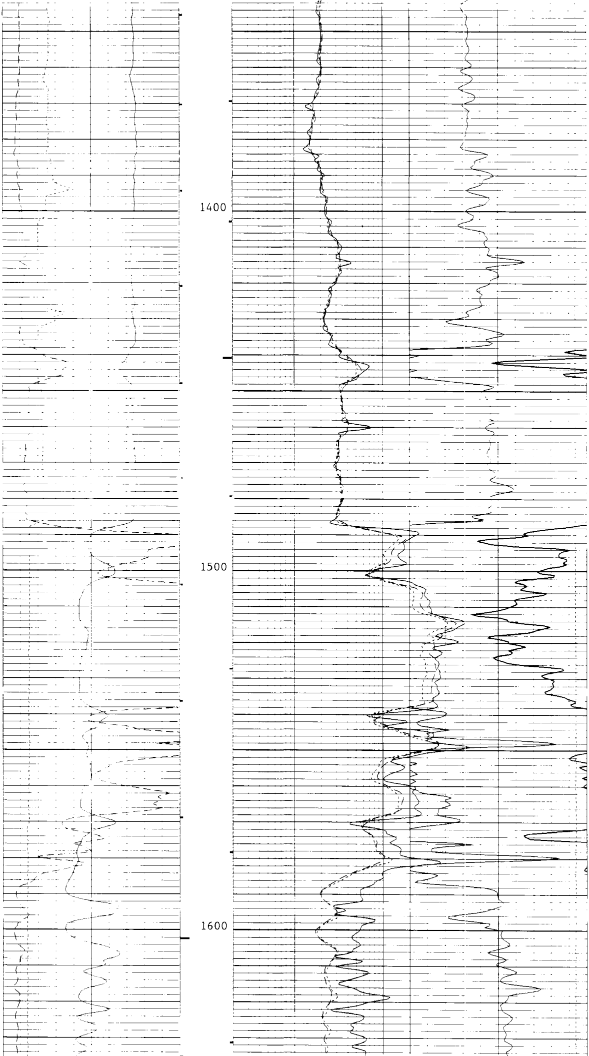
INPUT FILE(S) CREATION DATE
11 09-JUN-1993 16:51

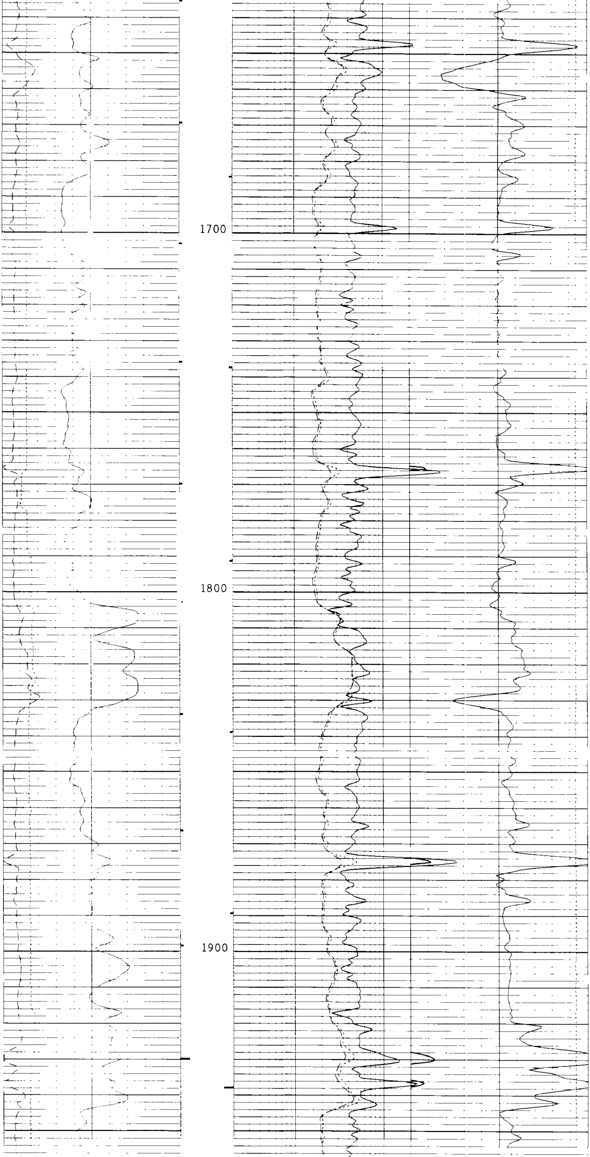
5"/100'

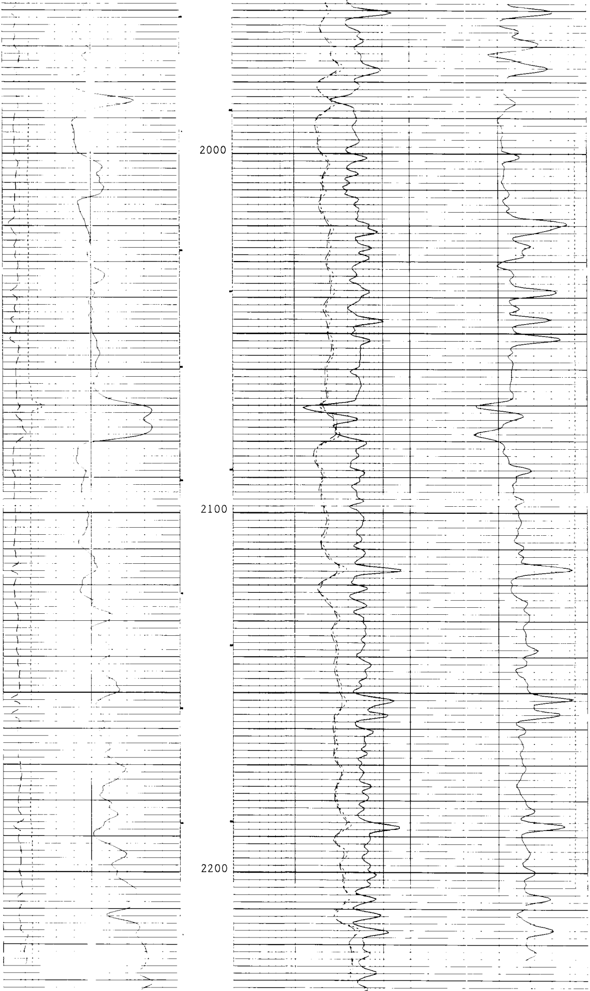


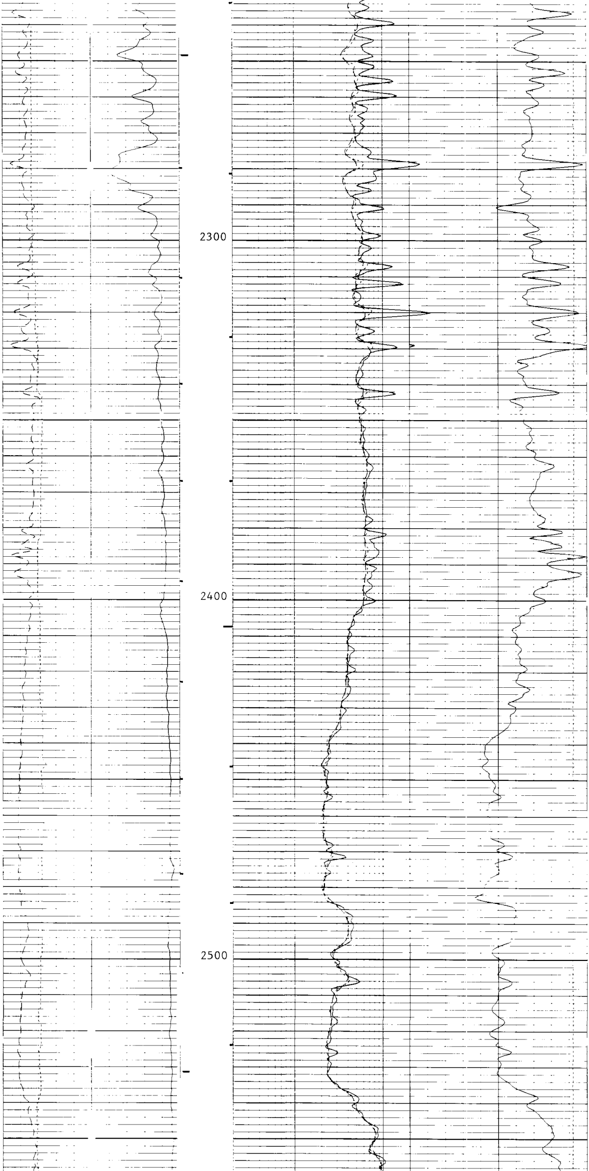


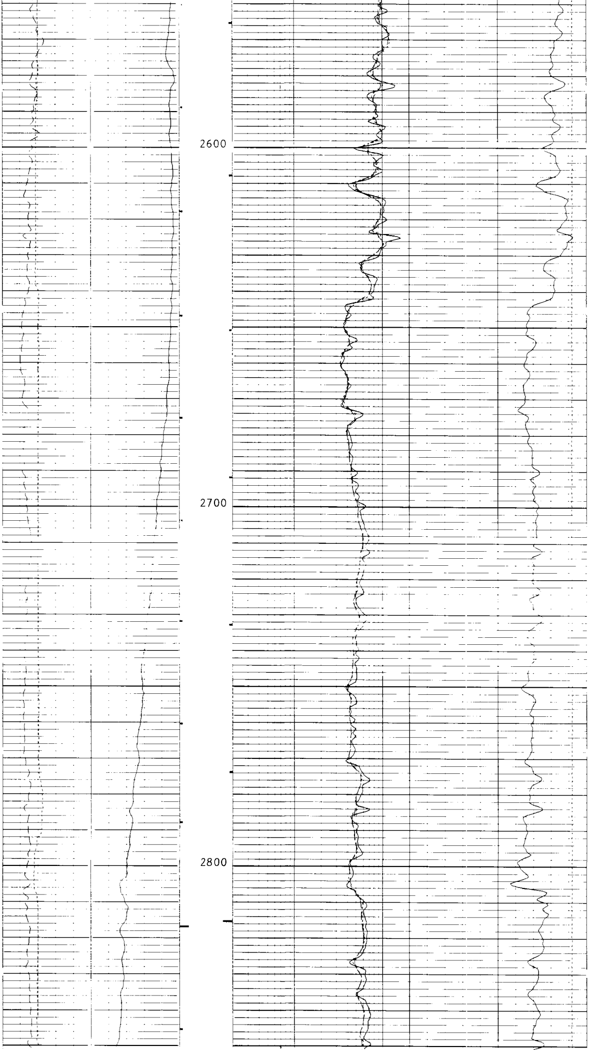


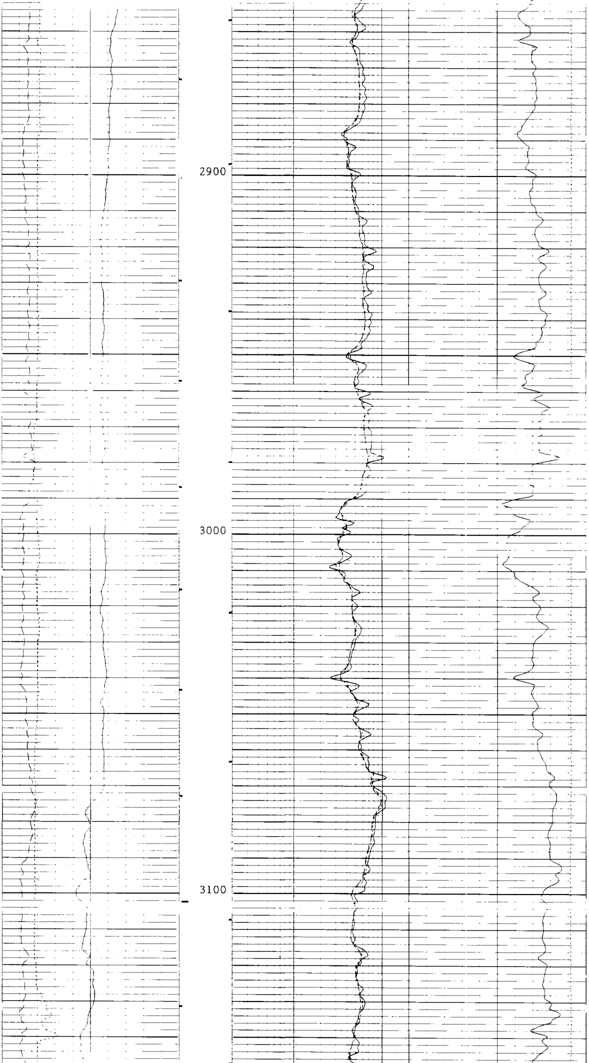


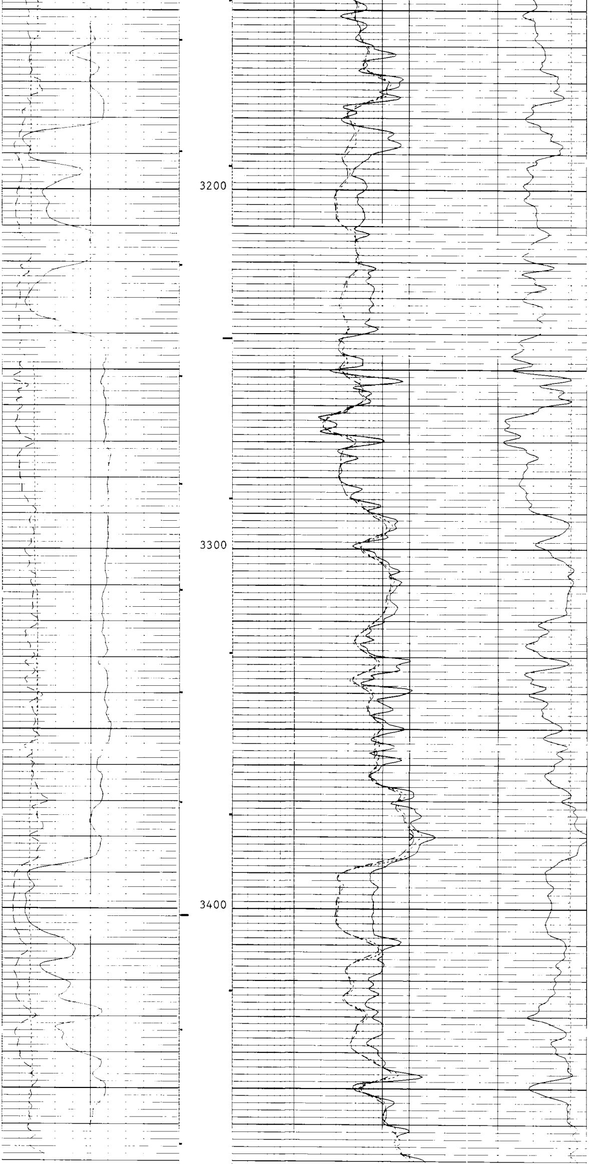


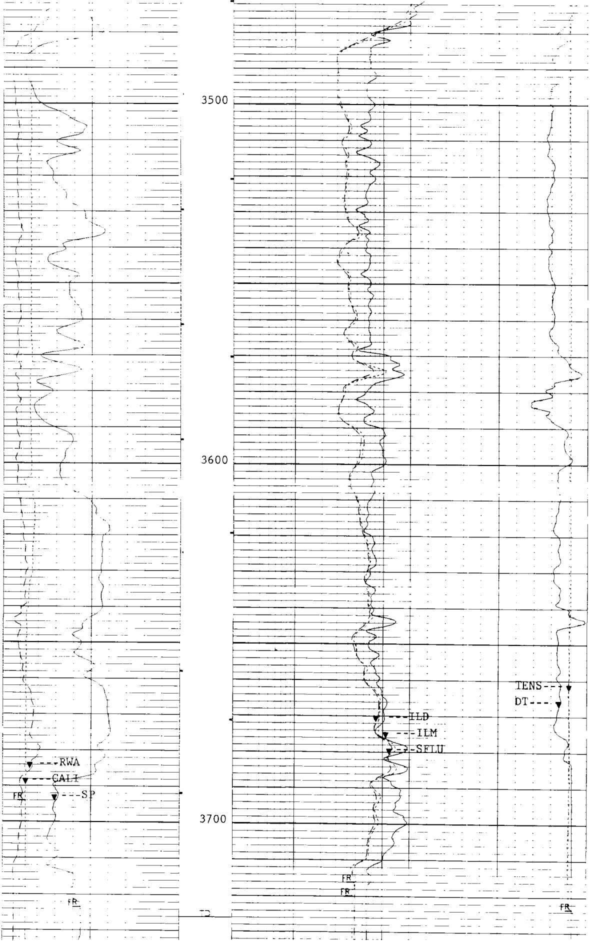












5"/100'

CP 38.2 FILE 3 09-JUN-1993 16:54

INPUT FILE(S) CREATION DATE
11 09-JUN-1993 16:51

TENS(LBF)
20500 500.00
DT(US/F)
175.00 75.000

RWA(OHMM)
0.0 3.0000
CALI(IN)
6.0000 16.000
SP(MV)
-100.0 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	SGTE	64.7 FEET
DTT	2.5 FEET	DITD	9.9 FEET
SLTL	44.1 FEET		

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	/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 - 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	NORM	
DO - Depth Offset for Logical Unit LI1	0.0	F
WMUD - Weight of Mud	9.70000	LB/G
MSEC - Medium Sonde Error Correction	7.90000	MM/M
SBR - Shoulder Bed Resistivity	1.00000	OHMM
DSEC - Deep Sonde Error Correction	6.40000	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	
CSIZ - Casing Size	4.00000	IN

REPEAT SECTION

ACCUMULATED INTEGRATION VALUES SUMMARY:

```
Integrated Hole Volume:    110.914 F3    FROM 1747.00 F    TO 1403.50 F
Integrated Cement Volume: 72.9757 F3     FROM 1747.00 F    TO 1403.50 F
  (ASSUMING 4.50000 IN   O.D. CASING)
Integrated Transit Time:  .0497785 S     FROM 1747.00 F    TO 1403.50 F
```

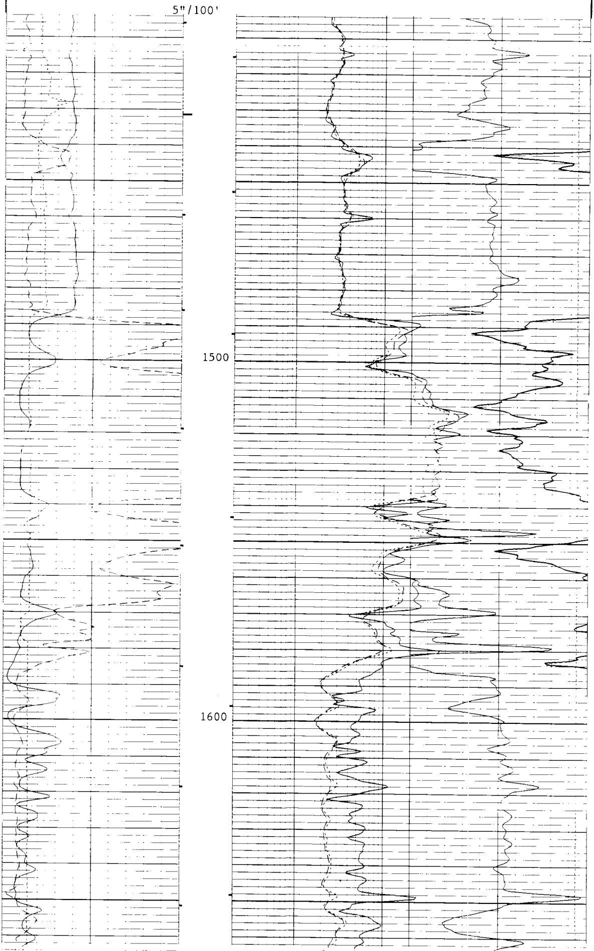
EVENT MARK SUMMARY:

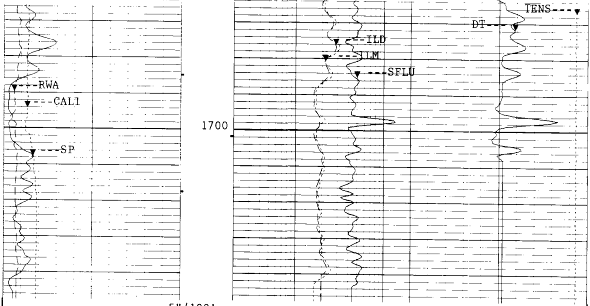
OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK EDGE
Integrated Hole Volume	10.0000 F3	LEFT EDGE
Integrated Cement Volume	10.0000 F3	RIGHT EDGE

```
                                                   TENS(LBF)
                                          20500.               500.00
                                                   DT(US/F)
                                          175.00               75.000
       RWA(OHMM)                                  ILD(OHMM)
0.0              3.0000        .20000                          2000.0
       CALI(IN)                                   ILM(OHMM)
6.0000           16.000        .20000                          2000.0
       SP(MV)                                     SFLU(OHMM)
-100.0           50.000        .20000                          2000.0
```

CP 38.2 FILE 1 09-JUN-1993 16:18

INPUT FILE(S) CREATION DATE
10 09-JUN-1993 16:03

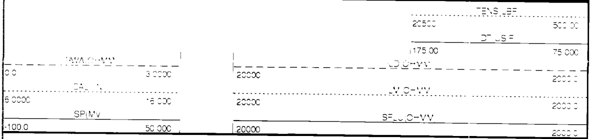




5"/100'

CP 38.2 FILE 1 09-JUN-1993 16:17

INPUT FILE(S) CREATION DATE
10 09-JUN-1993 16:03



SENSOR MEASURE POINT TO TOOL ZERO

SRAT	41.7	FEET	AMPL	44.1	FEET
CBFS	43.1	FEET	CBL	44.1	FEET
TT2	44.1	FEET	TT1	43.1	FEET
TT4	39.3	FEET	TT3	40.3	FEET
TT	44.1	FEET	TO	44.1	FEET
CBSL	44.1	FEET	TTSL	44.1	FEET
CALI	31.9	FEET	GR	64.7	FEET
ILM	6.1	FEET	ILD	9.9	FEET
SP	2.5	FEET	SFL	6.8	FEET
TENS	2.5	FEET	SPAR	2.5	FEET
NOIS	2.5	FEET			

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
SMB	DISA		VDLR	2IN	
TOCA	DISA		RATE	15	HZ
DG	/5		DETE	E2	
NMSG	180	US	CBLG	35	US
AMPL	2		CBL	UT	
WFM	1		SS	FAST	
TOD	DISA		DTF	189.000	US/F
DTM	56.0000	US/F	CDTS	100.000	
SPFS	R-H		PP	NORM	
DO	0.0	F	WMUD	9.70000	LB/G
MSEC	7.90000	MM/M	SBR	1.00000	OHMM
DSEC	6.40000	MM/M	FCD	4.50000	IN
NCJT	GSRY		FPHI	SPHI	
DWCO	512		DSIN	5	US
DDEL	200	US	BS	7.87500	IN
BHS	OPEN		CSIZ	4.00000	IN

CALIBRATION SUMMARY

```
                 AFTER SURVEY TOOL CHECK SUMMARY


  PERFORMED:    09-JUN-1993 16:52
  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          -.2           504.3       501.8    MM/M
   ILM      0.0           .1           499.1       497.5    MM/M
   SFL      0.0           .1           500.0       487.2    MM/M

ILD SONDE ERROR CORRECTION :         6.4 MM/M
ILM SONDE ERROR CORRECTION :         7.9 MM/M

BEFORE SURVEY:              ZERO: 09-JUN-1993 15:31  PLUS: 09-JUN-1993 15:31
AFTER SURVEY CHECK:         ZERO: 09-JUN-1993 16:51  PLUS: 09-JUN-1993 16:51

   CP 38.2            FILE   13        09-JUN-1993 16:51



                 BEFORE SURVEY CALIBRATION SUMMARY


  PERFORMED:    09-JUN-1993 15:32
  PROGRAM FILE: ISN    (VERSION    38.2    92/10/12  92/10/12)


DITD            ELECTRONICS CALIBRATION SUMMARY

              MEASURED                       CALIBRATED
          ZERO     PLUS                 ZERO        PLUS         UNITS
   ILD     .42    537.2                 0.0        504.3         MM/M
   ILM     .42    524.4                 0.0        499.1         MM/M
   SFL    1.38    524.4                 0.0        500.0         MM/M

ILD SONDE ERROR CORRECTION :         6.4 MM/M
ILM SONDE ERROR CORRECTION :         7.9 MM/M

ZERO: 09-JUN-1993 15:31  PLUS: 09-JUN-1993 15:31  COMP: 09-JUN-1993 15:31


SGTE            DETECTOR CALIBRATION SUMMARY

              MEASURED
          BKGD     JIG          CALIBRATED          UNITS
   GR      28      194             165              GAPI

BACK: 09-JUN-1993 13:29   JIG: 09-JUN-1993 13:34  COMP: 09-JUN-1993 13:34


MCDB            CALIPER CALIBRATION SUMMARY

              MEASURED                       CALIBRATED
          SMALL   LARGE                SMALL      LARGE        UNITS
  CALI    7.17    10.05                8.00       12.00          IN

SMALL: 09-JUN-1993 13:28 LARGE: 09-JUN-1993 13:32 COMP: 09-JUN-1993 13:32

   CP 38.2            FILE    6        09-JUN-1993 15:31



                 SHOP SUMMARY


  PERFORMED:    09-JUN-1993 13:15
  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      508.7      0.0       500.0      0.0       504.3    MM/M
     ILM      -8.7      504.8      0.0       500.0      0.0       499.1    MM/M
  ILD  SONDE ERROR CORRECTION :          6.4 MM/M
  ILM  SONDE ERROR CORRECTION :          7.9 MM/M

                        (IS:1342, IC:1386)

     CP 38.2            FILE     0        09-JUN-1993 13:15
```

COMPANY	Nahama & Weagant Energy Co.			SCHL.	FR	3720.0 F
				SCHL.	TD	3726.0 F
WELL	Buzzard" #12-35-65			DRLR.	TD	3727.0 F
FIELD	MIST			Elev:	KB	810.0 F
					DF	809.0 F
COUNTY	COLUMBIA	**STATE**	OREGON		GL	800.0 F

Schlumberger

DUAL INDUCTION-SFL-SONIC