Schlumberger

FORMATION DENSITY - COMP. NEUTRON - GR

CSU

COMPANY:	ARCO OIL AND GAS
WELL:	CAVENHAM FOREST IND. #41-9
FIELD:	MIST
COUNTY:	COLUMBIA
STATE:	OREGON
NATION:	USA
LOCATION:	1244.46' SOUTH AND 355.73' WEST FROM THE NE CORNER OF:
SEC: 9	TWP: 5 NORTH RGE: 4 WEST

OTHER SERVICES-
- DIL
- BHC
- HDT
- FDC/CNL/GR
- WST

PERMANENT DATUM:	GL
ELEV. OF PERM. DATUM:	835.9 F
LOG MEASURED FROM:	KB
11.0 F	ABOVE PERM. DATUM
DRLG. MEASURED FROM:	KB

ELEVATIONS-

KB:	846.9 F
DF:	845.9 F
GL:	835.9 F

PROGRAM TAPE NO: 28.4A

SERVICE ORDER NO: 524312

DATE:	9 OCT 86
RUN NO:	ONE

DEPTH-DRILLER:	2500.0 F
DEPTH-LOGGER:	2597.0 F
BTM. LOG INTERVAL:	2457.0 F
TOP LOG INTERVAL:	270.0 F
CASING-DRILLER:	470.0 F
CASING-LOGGER:	470.0 F
CASING:	9 5/8"
WEIGHT:	47.0000 LB/F
BIT SIZE:	8 1/2"
DEPTH:	2500.0 F

TYPE FLUID IN HOLE:	LIGNOSULFONATE
DENSITY:	9.90 LB/G
VISCOSITY:	38.0 S
PH:	10.0
FLUID LOSS:	5.0 C3
SOURCE OF SAMPLE:	FLOWLINE
RM:	2.680 OHMM AT 78.0 DEGF
RMF:	4.290 OHMM AT 60.0 DEGF
RMC:	3.100 OHMM AT 61.0 DEGF
SOURCE RMF/RMC:	MEAS/MEAS
RM AT BHT:	2.170 OHMM AT 98.0 DEGF
RMF AT BHT:	2.737 OHMM AT 98.0 DEGF
RMC AT BHT:	2.008 OHMM AT 98.0 DEGF

TIME CIRC. STOPPED: 0350 10/9
TIME LOGGER ON BTM.: 0900 10/9

MAX. REC. TEMP: 98.0 DEGF

LOGGING UNIT NO: 8128
LOGGING UNIT LOC: SACRAMENTO
RECORDED BY: BLAZE
WITNESSED BY: M. ANDERSON

REMARKS:

RIG: H&C #5
TWO THERMOMETERS RUN

EQUIPMENT NUMBERS-

DIS 1181	DIC 658	PGS 542	PDH 340
GSR 6608	SFT 1171	CNC 1132	

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 INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

CP 28.4A FILE 0 09-OCT-86 11:16

EVENT MARK SUMMARY:

OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK EDGE
IHV	10.0000 F3	LEFT EDGE

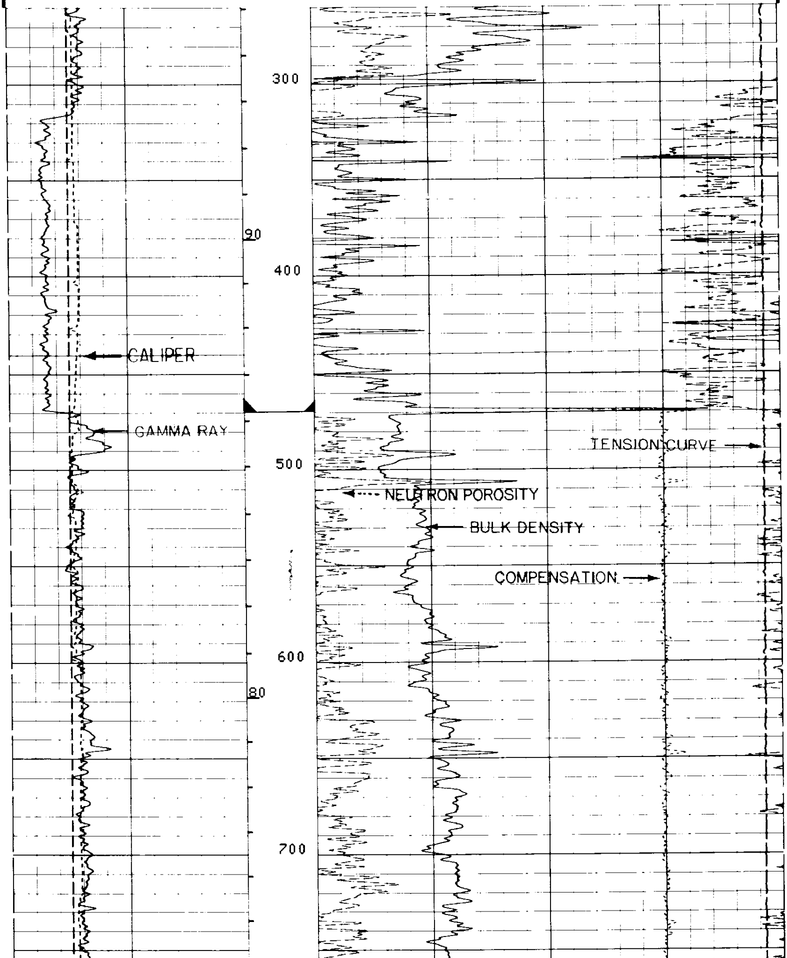
CHANGED PARAMETERS

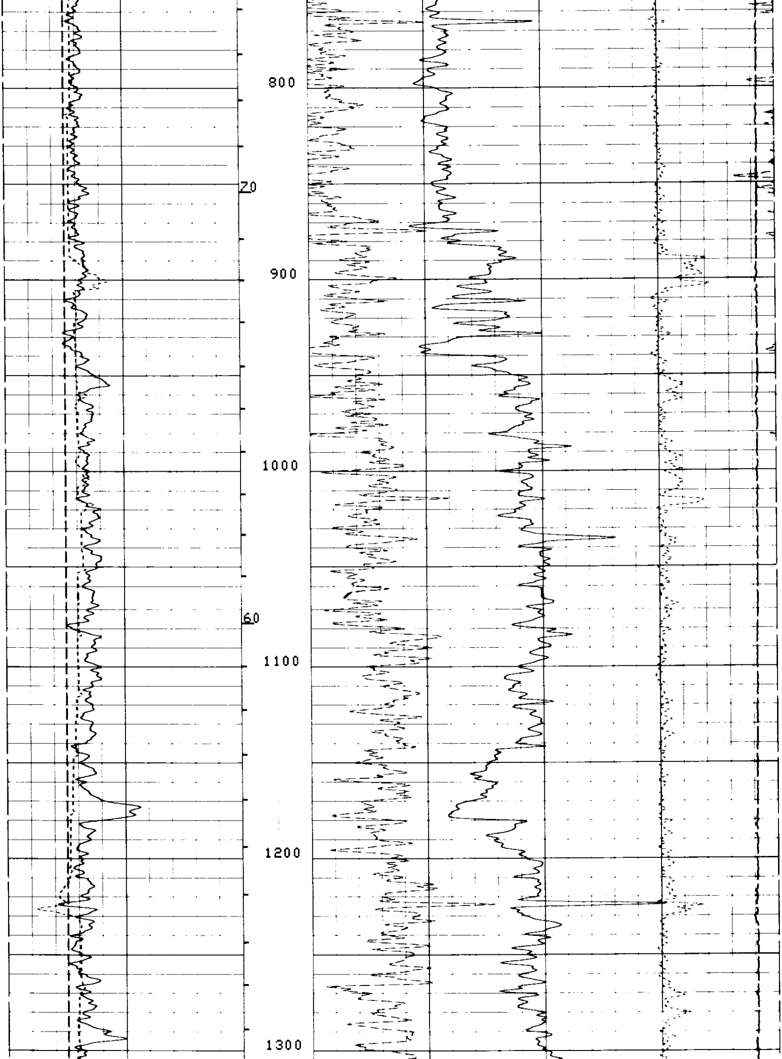
NAME	VALUE	UNIT	DEPTH (F)	NAME	VALUE	UNIT	DEPTH (F)

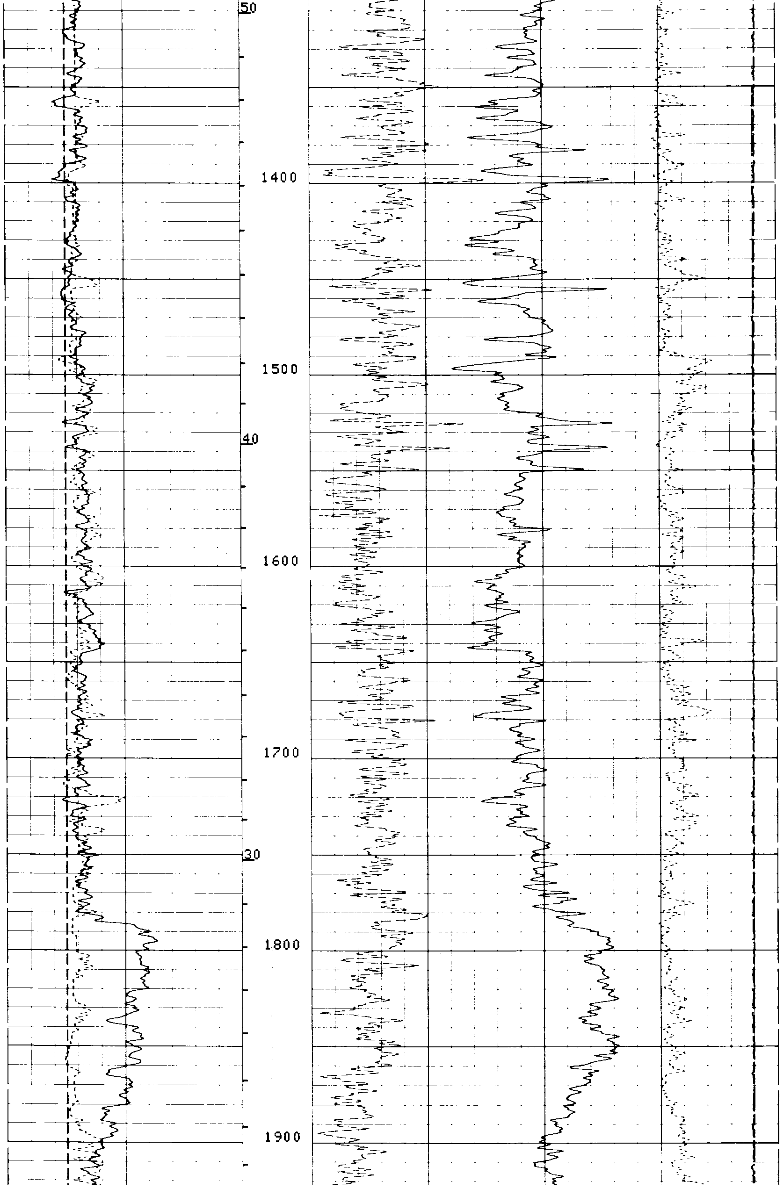
TENS(LB)	10000.	0.0
DRHO(G/C3)	-.2500	.25000
NPHI	1.2000	.60000
RHOB(G/C3)	.65000	1.6500
NPHI	.60000	0.0
RHOB(G/C3)	1.6500	2.6500

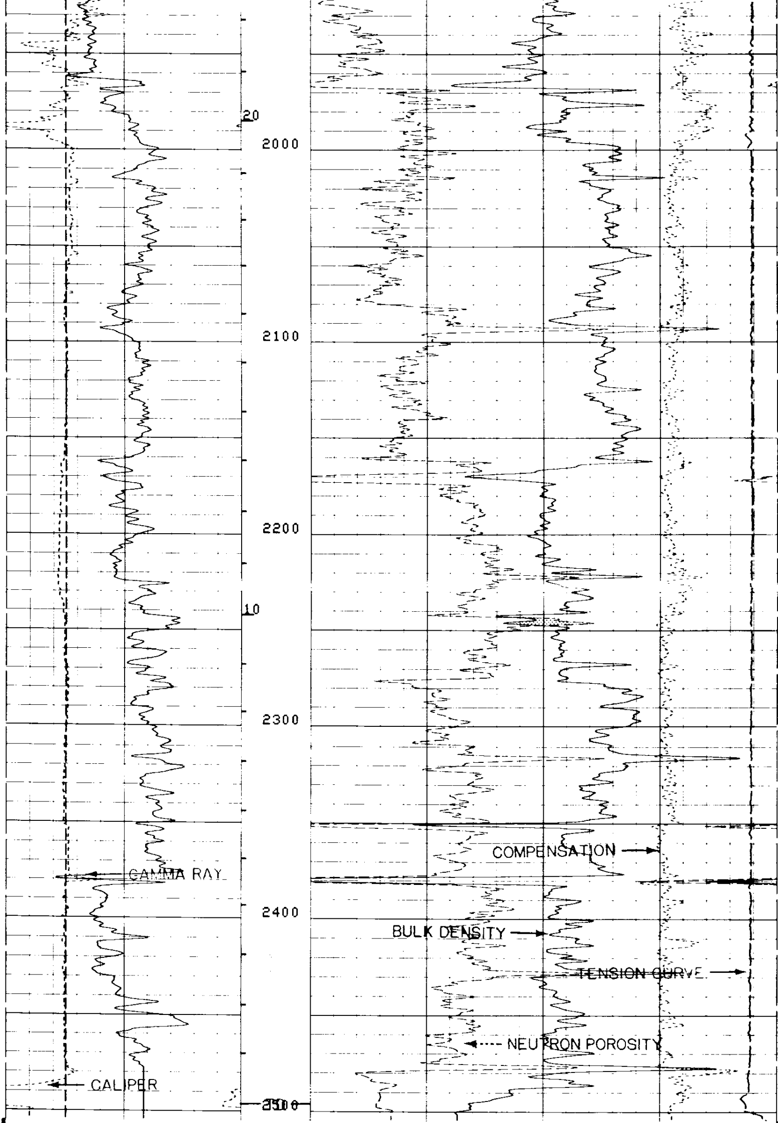
BS (IN)	6.0000	16.000
CALI(IN)	6.0000	16.000
GR (GAPI)	0.0	150.00

CP 28.4A FILE 2 09-OCT-86 10:27









CP 28.4A FILE 2 09-OCT-86 09:12

```
                                                              TENS(LB  )
                                                   10000.                    0.0
                                                              DRHO(G/C3)
                                                   -.2500                 .25000
                                          NPHI
                              1.2000                                      .60000
                                          RHOB(G/C3)
      BS  (IN  )
6.0000          16.000        .65000                                      1.6500
      CALI(IN  )                          NPHI
6.0000          16.000        .60000                                         0.0
      GR  (GAPI)                          RHOB(G/C3)
0.0             150.00        1.6500                                      2.6500
```

```
                  SENSOR MEASURE POINT TO TOOL ZERO

         FCNL 18.1  FEET                        GR    26.6  FEET
         FFDC  2.7  FEET                        NCNL  18.1  FEET
         CALI  2.7  FEET                        NFDC   2.7  FEET
         NRAT 18.1  FEET                        TENS   -.3  FEET
```

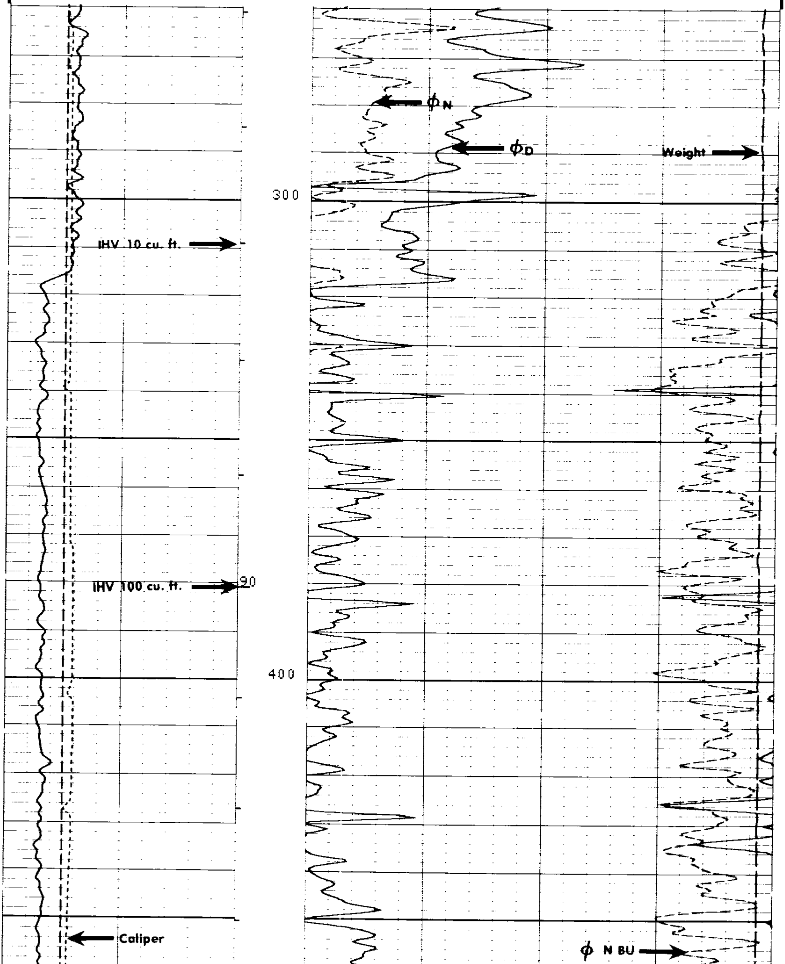
```
                              PARAMETERS

        NAME  VALUE      UNIT                 NAME  VALUE      UNIT

        MATR SAND                             HC    CALI
        FD   1.00000     G/C3                 PSNR 2.31800
        FDCC ALLO                             MDEN 2.65000     G/C3
        WMUD 10.3000     LB/G                 BHF  WATE
        BHS  OPEN                             FPHI PHIX
        BS   8.50000     IN
```

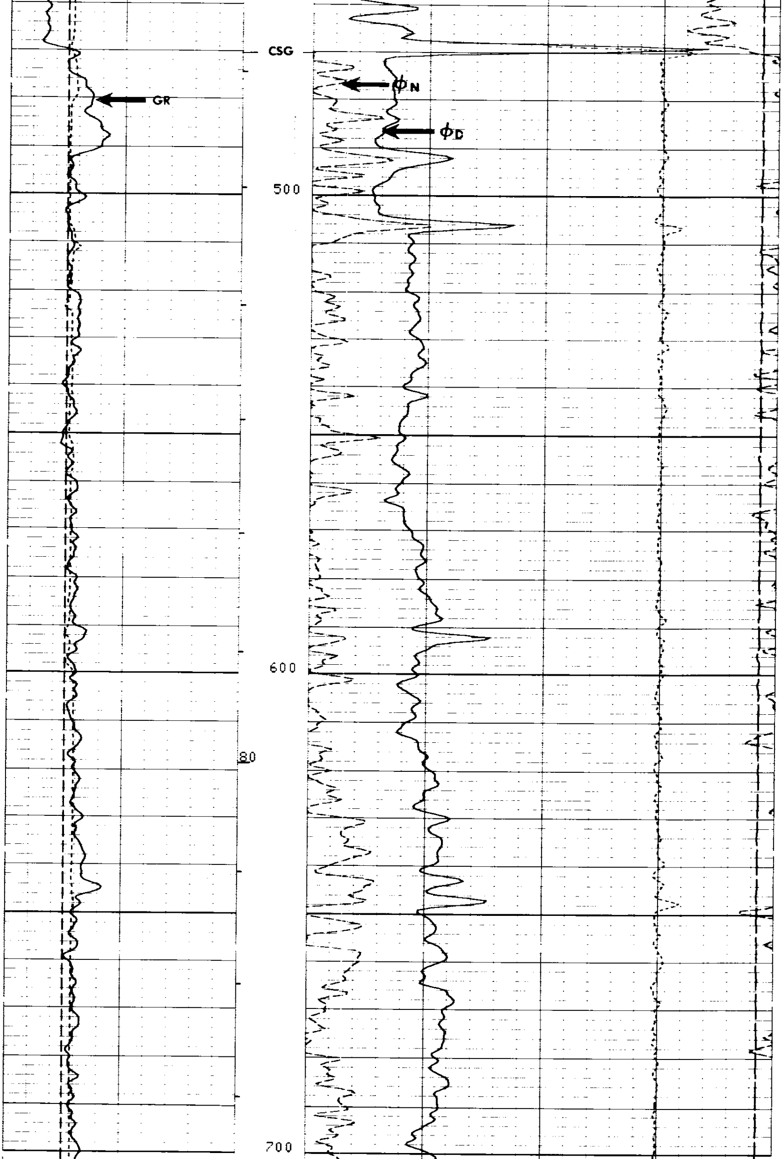
```
EVENT MARK SUMMARY:

OUTPUT  INTERVAL         DEPTH TRACK
        BETWEEN PIPS     EDGE

IHV     10.0000 F3       LEFT EDGE
```

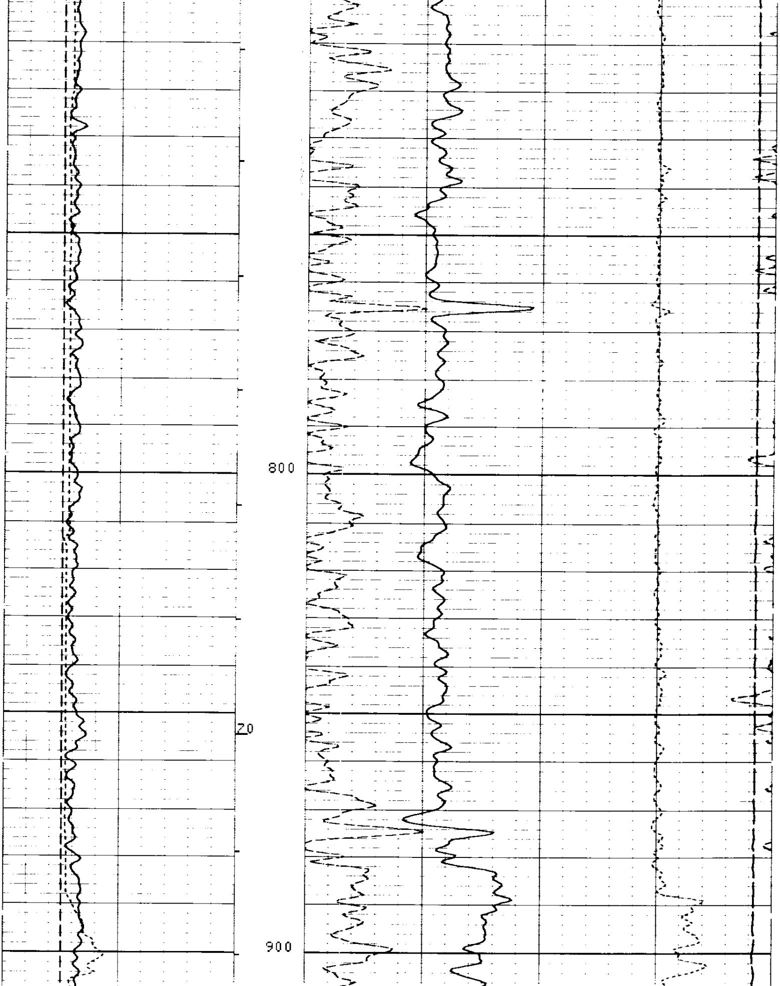
```
                           CHANGED PARAMETERS

NAME  VALUE      UNIT  DEPTH ( F )     NAME  VALUE      UNIT  DEPTH ( F )
```

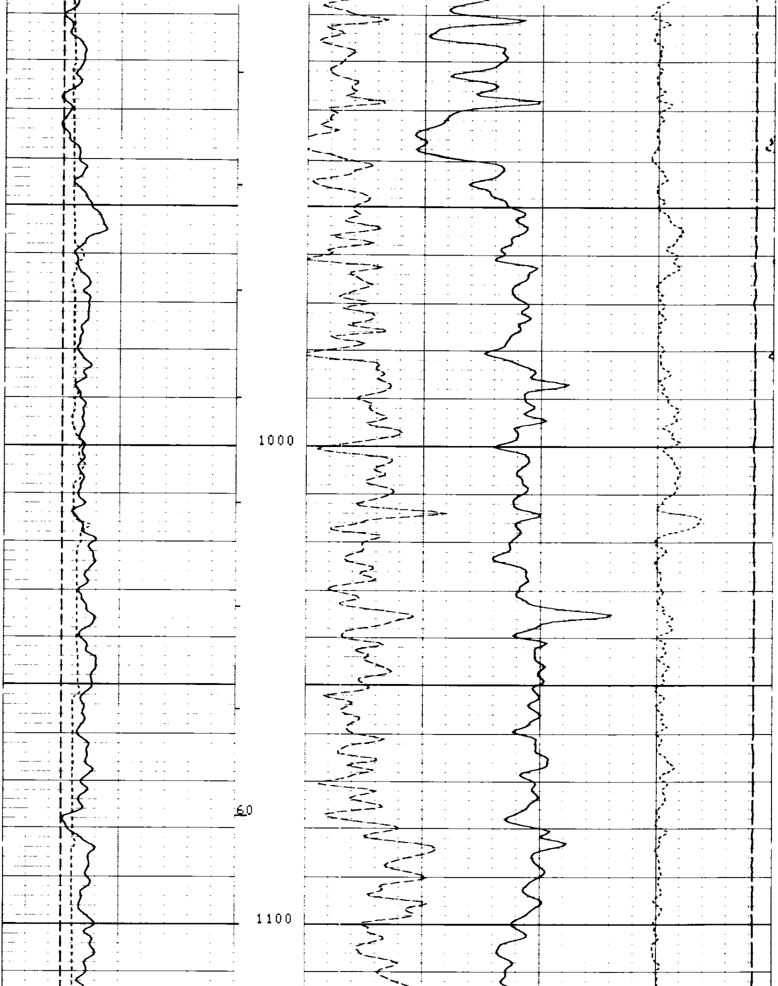
```
                                                              TENS(LB  )
                                                   10000.                    0.0
                                                              DRHO(G/C3)
                                                   -.2500                 .25000
                                          DPHI
                              1.2000                                      .60000
      BS  (IN  )                          NPHI
6.0000          16.000        1.2000                                      .60000
      CALI(IN  )                          NPHI
6.0000          16.000        .60000                                         0.0
      GR  (GAPI)                          DPHI
0.0             150.00        .60000                                         0.0
```

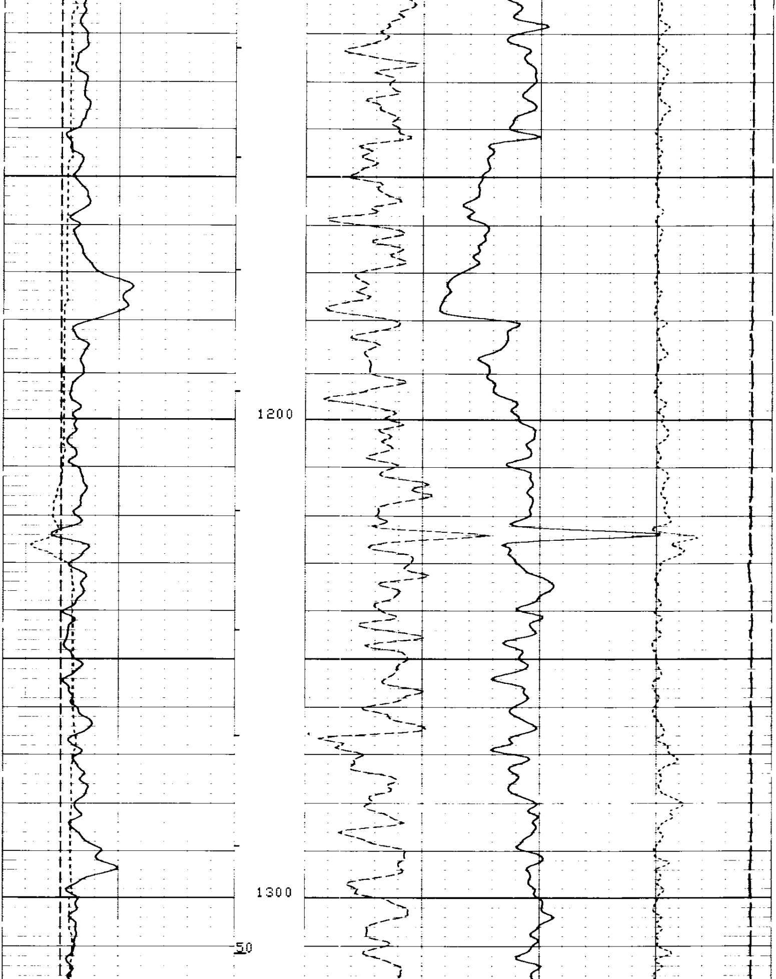
```
        CP 28.4A            FILE     2        09-OCT-86 10:27
```

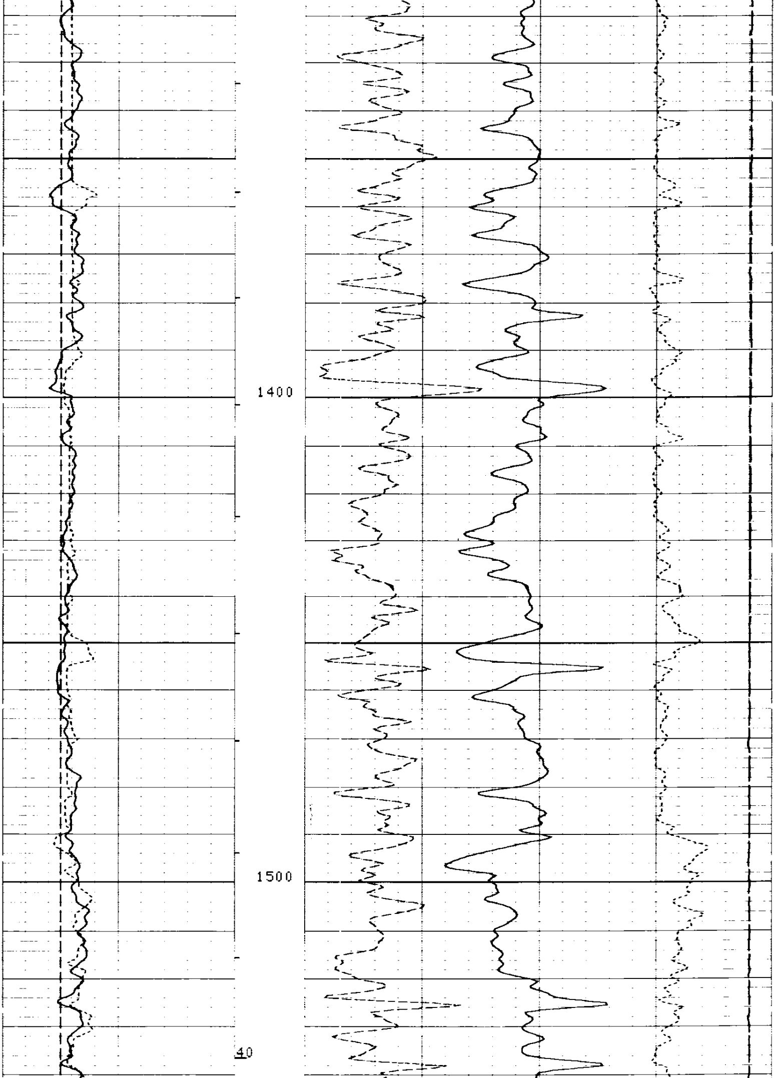


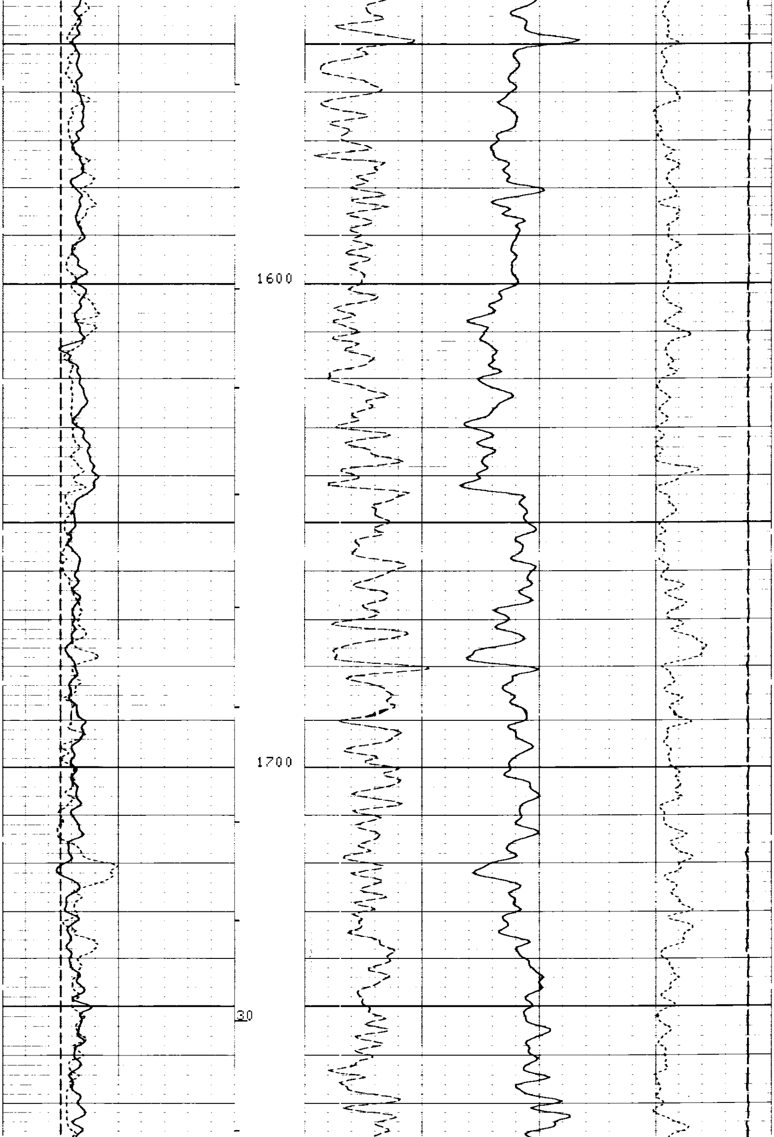


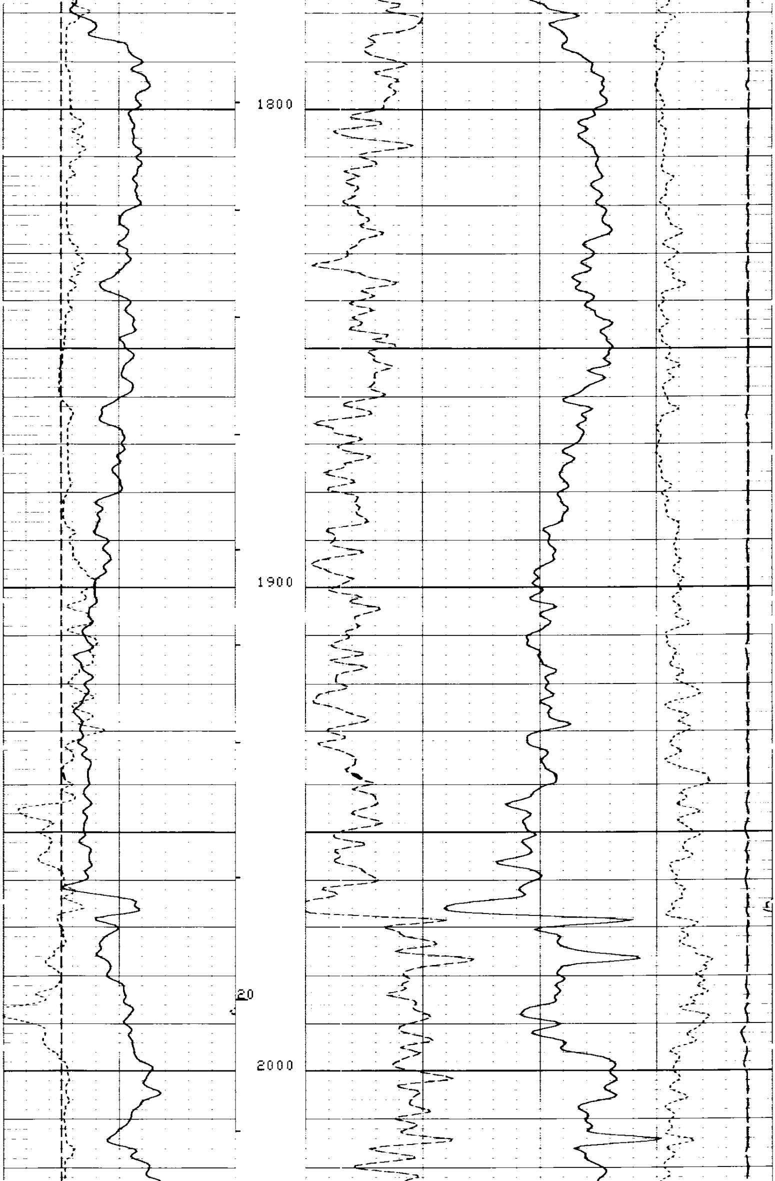


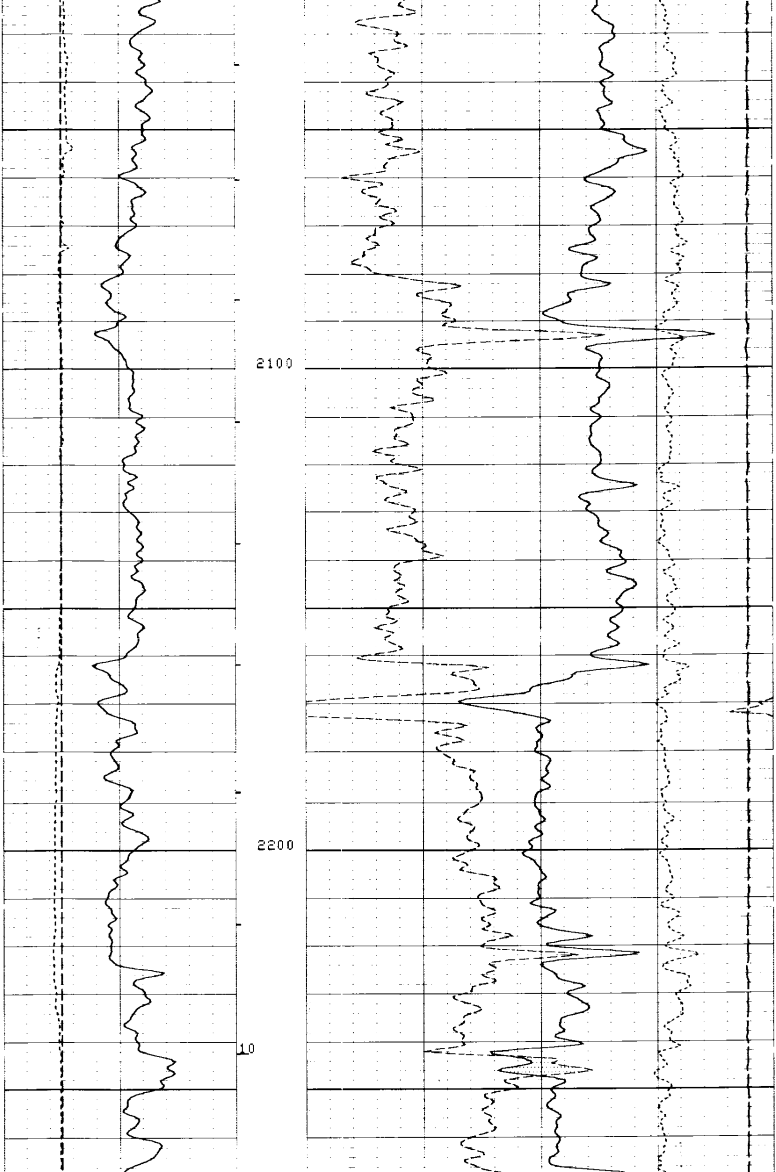


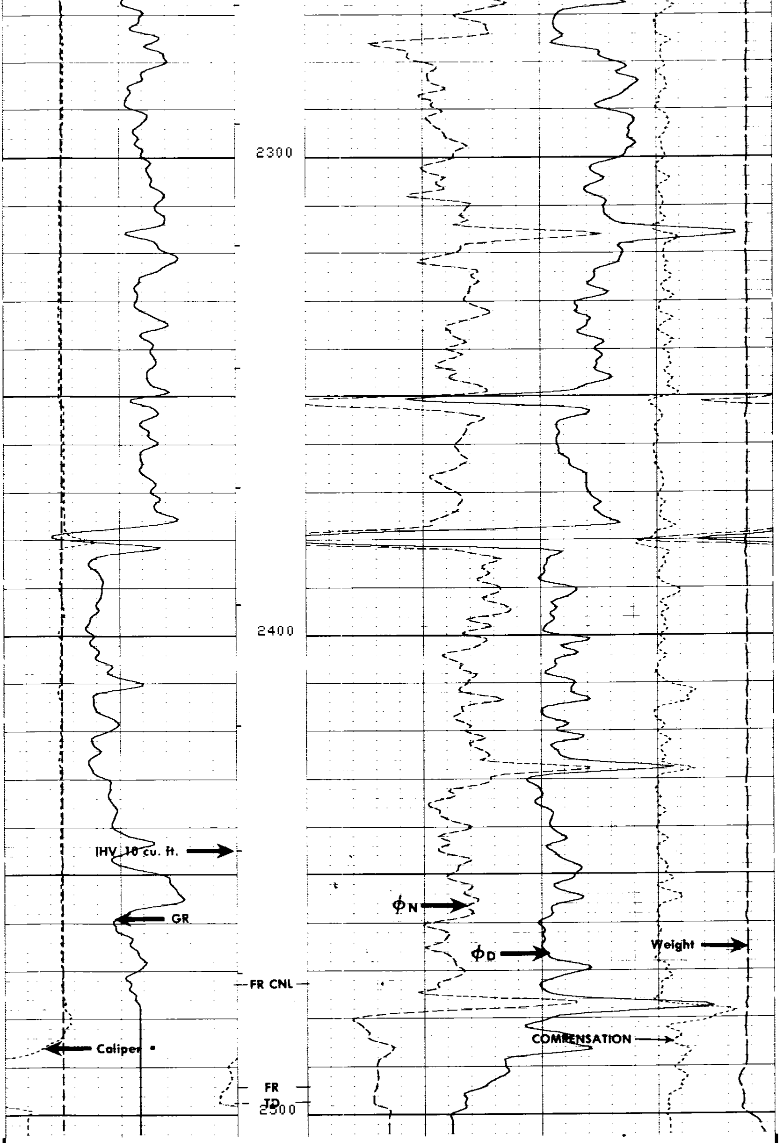












CP 28.4A FILE 2 09-OCT-86 09:12

Curve	Left	Right
TENS(LB)	10000.	0.0
DRHO(G/C3)	-.2500	.25000
DPHI	1.2000	.60000
NPHI	1.2000	.60000
NPHI	.60000	0.0
DPHI	.60000	0.0
BS (IN)	6.0000	16.000
CALI(IN)	6.0000	16.000
GR (GAPI)	0.0	150.00

SENSOR MEASURE POINT TO TOOL ZERO

FCNL	18.1	FEET	GR	26.6	FEET
FFDC	2.7	FEET	NCNL	18.1	FEET
CALI	2.7	FEET	NFDC	2.7	FEET
NRAT	18.1	FEET	TENS	-.3	FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
MATR	SAND		HC	CALI	
FD	1.00000	G/C3	PSNR	2.31800	
FDCC	ALLO		MDEN	2.65000	G/C3
WMUD	10.3000	LB/G	BHF	WATE	
BHS	OPEN		FPHI	PHIX	
BS	8.50000	IN			

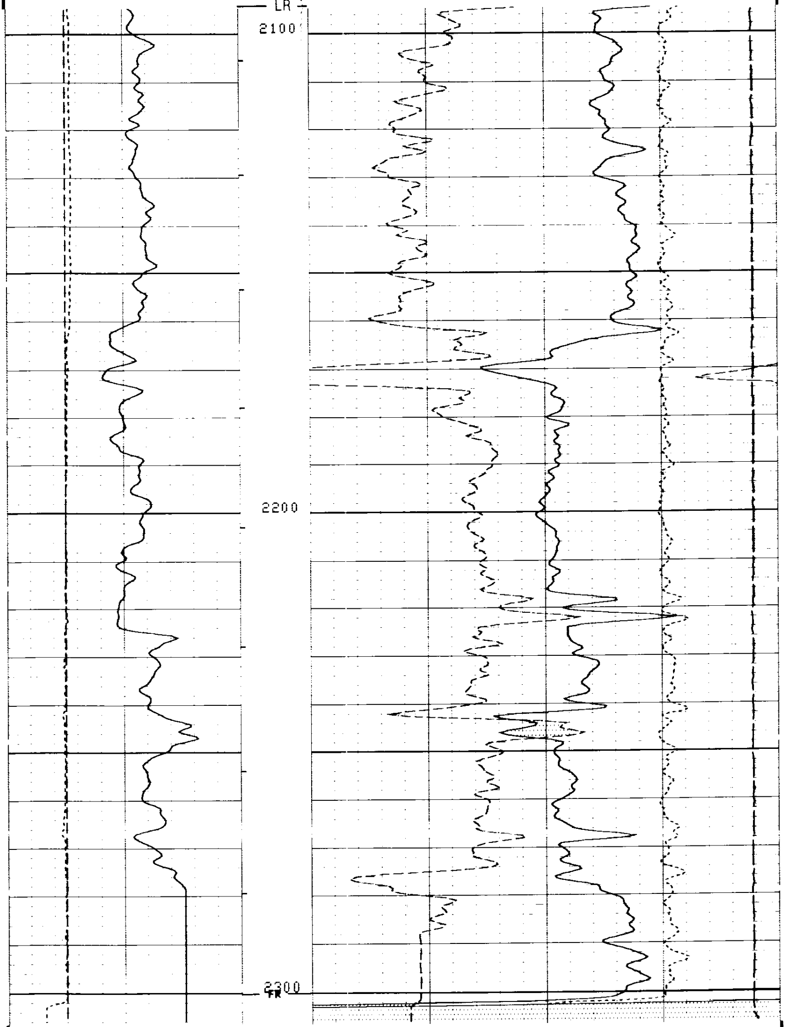
EVENT MARK SUMMARY:

OUTPUT	INTERVAL BETWEEN PIPS	DEPTH TRACK* EDGE
IHV	10.0000 F3	LEFT EDGE

Curve	Left	Right
TENS(LB)	10000.	0.0
DRHO(G/C3)	-.2500	.25000
DPHI	1.2000	.60000
NPHI	1.2000	.60000
NPHI	.60000	0.0
DPHI	.60000	0.0
BS (IN)	6.0000	16.000
CALI(IN)	6.0000	16.000
GR (GAPI)	0.0	150.00

REPEAT SECTION

CP 28.4A FILE 1 09-OCT-86 09:10



CP 28.4A FILE 1 09-OCT-86 09:01

REPEAT SECTION

```
                                                              TENS(LB   )
                                                       10000.                 0.0
                                                              DRHO(G/C3)
                                                       -.2500              .25000
                                              DPHI
                                  1.2000                                   .60000
          BS   (IN  )                         NPHI
6.0000             16.000         1.2000                                   .60000
          CALI(IN  )                          NPHI
6.0000             16.000         .60000                                      0.0
          GR   (GAPI)                         DPHI
0.0                150.00         .60000                                      0.0
```

```
                    SENSOR MEASURE POINT TO TOOL ZERO

        FCNL 18.1   FEET                          GR    26.6   FEET
        FFDC  2.7   FEET                          NCNL  18.1   FEET
        CALI  2.7   FEET                          NFDC   2.7   FEET
        NRAT 18.1   FEET                          TENS   -.3   FEET
```

```
                              PARAMETERS

      NAME  VALUE       UNIT                  NAME  VALUE       UNIT

      MATR  SAND                              HC    CALI
      FD    1.00000     G/C3                  PSNR  2.31800
      FDCC  ALLO                              MDEN  2.65000     G/C3
      WMUD  10.3000     LB/G                  BHF   WATE
      BHS   OPEN                              FPHI  PHIX
      BS    8.50000     IN
```

```
                 AFTER SURVEY TOOL CHECK SUMMARY

  PERFORMED:     09-OCT-86 10:59
  PROGRAM FILE:  MISN    (VERSION    28.4A    86/04/03)

CNTA                          TOOL   CHECK

                             JIG
                      BEFORE        AFTER
  NRAT                2.157         2.173

  POROSITY CHANGE   (LIME):    .003

PGTK                          TOOL   CHECK

                             JIG
                      BEFORE        AFTER        UNITS
  FFDC                 343           343          CPS
  NFDC                 528           529          CPS

  RHOB   CHANGE (WATER):    .001 G/C3

   CP 28.4A            FILE     4        09-OCT-86 10:59
```

```
                 BEFORE SURVEY CALIBRATION SUMMARY

  PERFORMED:     09-OCT-86 02:14
  PROGRAM FILE:  MISN    (VERSION    28.4A    86/04/03)
```

```
SGTE              DETECTOR CALIBRATION SUMMARY

             MEASURED
           BKGD    JIG         CALIBRATED         UNITS
    GR      42     203            165             GAPI


CNTA              DETECTOR CALIBRATION SUMMARY

               TANK                        JIG
          INPUT  CALIBRATED         MEASURED   CALIBRATED
  NRAT    2.31800  2.158              2.316       2.157


PGTK              DETECTOR CALIBRATION SUMMARY

GAIN COMPUTED FROM SHOP BLOCK COUNTS

               BLOCK                       JIG
          INPUT  CALIBRATED         MEASURED   CALIBRATED     UNITS
  FFDC    538      337                 548        343          CPS
  NFDC    844      528                 845        528          CPS


PGTK              CALIPER CALIBRATION SUMMARY

             MEASURED                    CALIBRATED
           SMALL   LARGE                 SMALL     LARGE        UNITS
  CALI    11.32    15.4                  8.00      12.0          IN

   CP 28.4A           FILE    0       09-OCT-86 02:14
```

```
                SHOP SUMMARY


  PERFORMED:    09-SEP-86 11:18
  PROGRAM FILE: SHOP   (VERSION    28.4    85/11/11)

CNTA              DETECTOR CALIBRATION SUMMARY

              TANK                      JIG
       MEASURED  CALIBRATED     MEASURED   CALIBRATED

  NRAT    2.318       2.158        2.363        2.201

                     (CNC:1132, CNB:2284)
```

```
                SHOP SUMMARY


  PERFORMED:    09-SEP-86 12:01
  PROGRAM FILE: SHOP   (VERSION    28.4    85/11/11)

PGTK              DETECTOR CALIBRATION SUMMARY

              BLOCK                     JIG
       MEASURED   CALIBRATED    MEASURED   CALIBRATED     UNITS

  FFDC  538         337           564         354          CPS
  NFDC  844         528           848         530          CPS

          (PGS:542 , PDH:340 , GSR:6608, SFT :1171)
```

COMPANY ARCO OIL AND GAS

WELL CAVENHAM FOREST IND. #41-9

FIELD MIST

COUNTY COLUMBIA STATE OREGON

SCHL. FR 2457
SCHL. TD 2597
DRLR. TD 2500

Elev: KB 846.9
DF 845.9
GL 835.9