(C42-09-65 & RD)

OPEN HOLE

DUAL INDUCTION GUARD LOG

COMP. ARCO OIL AND GAS CO.
WELL COLUMBIA COUNTY 42-9-65
FIELD MIST
COUNTY COLUMBIA ST. OREGON

COMPANY	ARCO OIL AND GAS CO.		
WELL	COLUMBIA COUNTY 42-9-65 REDRILL		
FIELD	MIST		
COUNTY	COLUMBIA	STATE	OREGON

API NO.
LOCATION N 89 DEG. 48 MIN. 18 SEC
E 103.11 FT.
S 0DEG. 11MIN. 42 SEC.
E 2298.03 FT.
FROM NE CORNER

OTHER SERVICES

SEC. 9 TWP. 6N RGE. 5W

PERMANENT DATUM	GROUND LEVEL	ELEV. 766.54	ELEV.: K.B. 776.54
LOG MEASURED FROM	KELLY BUSHING 10	FT. ABOVE PERM. DATUM	D.F. 775.54
DRILLING MEASURED FROM	KELLY BUSHING		G.L. 766.54

DATE	11/03/87			
RUN NO.	ONE			
DEPTH-DRILLER	2480			
DEPTH-WELEX	2471			
BTM. LOG INTER.	2466			
TOP LOG INTER.	400			
CASING-DRILLER	470 @ 9 5/8	@	@	@
CASING-WELEX	486 SEE REMARKS			
BIT SIZE	8.5			
TYPE FLUID IN HOLE	POLYMER			
DENS. : VISC.	10.1 : 45	:	:	:
PH : FLUID LOSS	10. : 6 ML	: ML	: ML	: ML
SOURCE OF SAMPLE	FLOW LINE			
RM @ MEAS. TEMP.	3.1 @ 68 F	@ F	@ F	@ F
RMF @ MEAS. TEMP.	2.60@ 68 F	@ F	@ F	@ F
RMC @ MEAS. TEMP.	3.87@ 68 F	@ F	@ F	@ F
SOURCE RMF RMC	MEA : MEA	:	:	:
RM @ BHT	@ F	@ F	@ F	@ F
TIME CIRC. STOPPED	14:00			
TIME ON BOTTOM	19:15			
MAX. REC. TEMP.	94 F@ 2466	F@	F@	F@
EQUIP. : LOCATION	1888 : WOODLAND	:	:	:
RECORDED BY	STARNES			
WITNESSED BY	MARINO,ORLANDO			

CONFIDENTIAL

FOLD HERE

SERVICE TICKET NO.: API SERIAL NO.: PCM VERSION: V1.07 08/08/85

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLES		
DATE : SAMPLE NO.	:	:
DEPTH-DRILLER		
TYPE FLUID IN HOLE		
DENS. : VISC.	:	:
PH : FLUID LOSS	: ML	: ML
SOURCE OF SAMPLE		
RM @ MEAS. TEMP.	@ F	@ F
RMF @ MEAS. TEMP.	@ F	@ F
RMC @ MEAS. TEMP.	@ F	@ F
SOURCE: RMF : RMC	:	:
RM @ BHT	@ F	@ F
RMF @ BHT	@ F	@ F
RMC @ BHT	@ F	@ F

RESISTIVITY SCALE CHANGES

TYPE LOG	DEPTH	SCALE UP HOLE	SCALE DOWN HOLE
DIGL	2480		
	470		

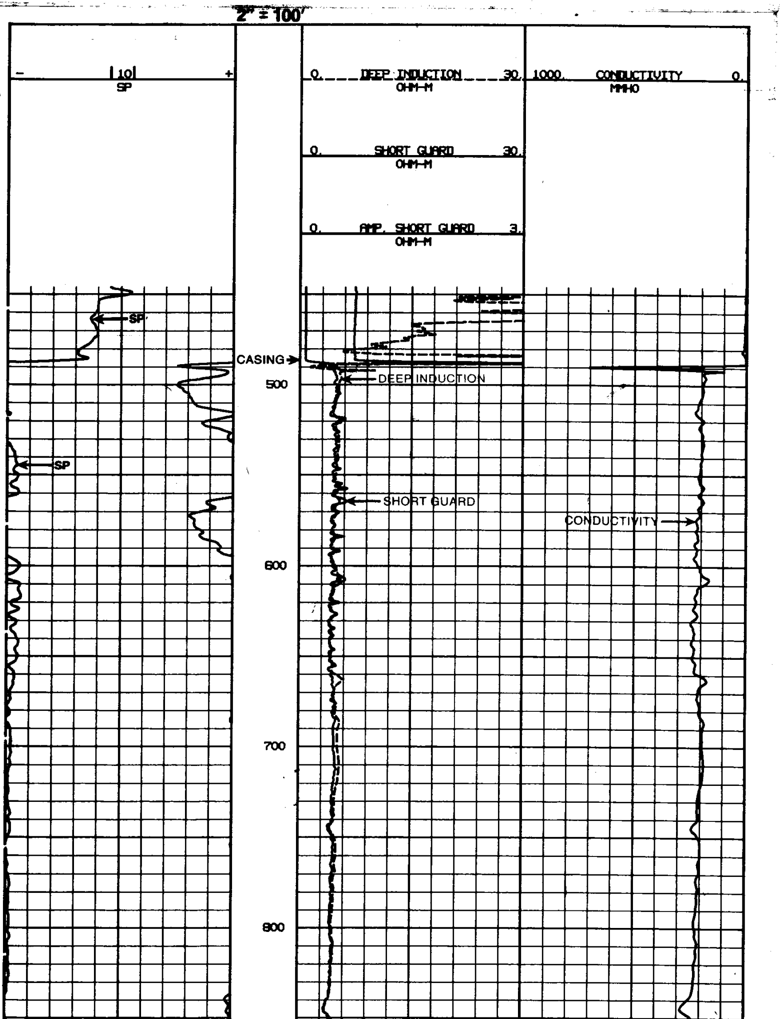
RESISTIVITY EQUIPMENT DATA

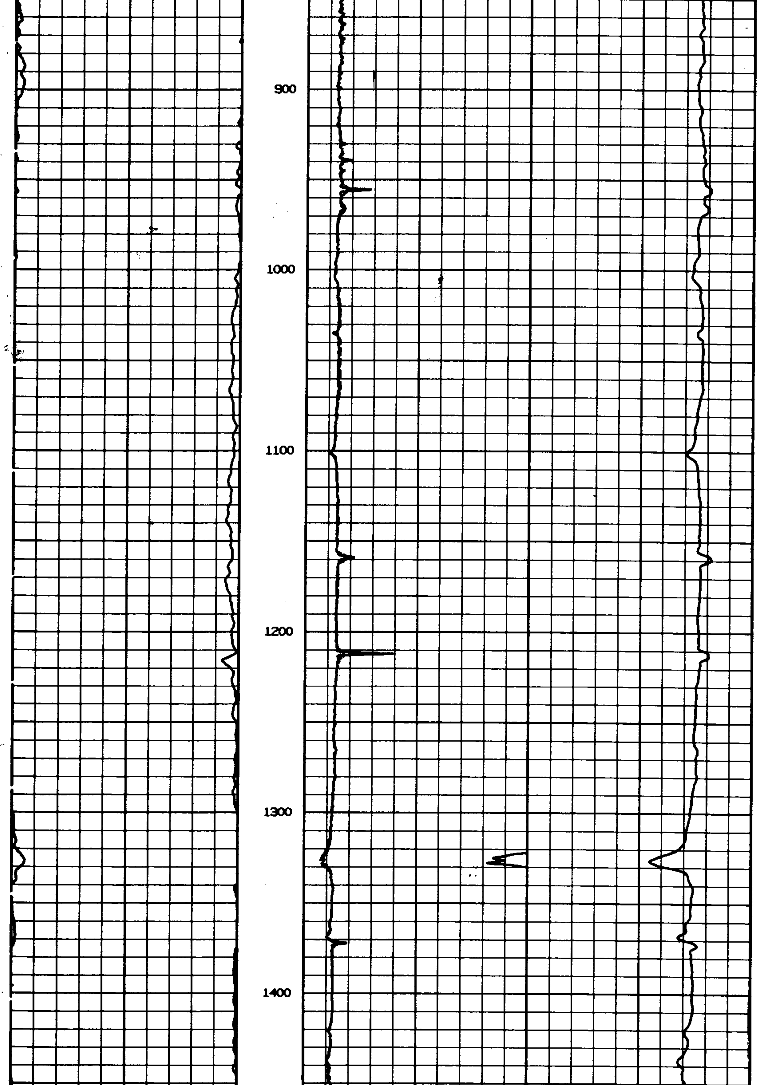
RUN NO.	TOOL TYPE AND NO.	PAD TYPE	TOOL POSITION	OTHER
ONE	DUAL 98882			
	GUARD 87279			

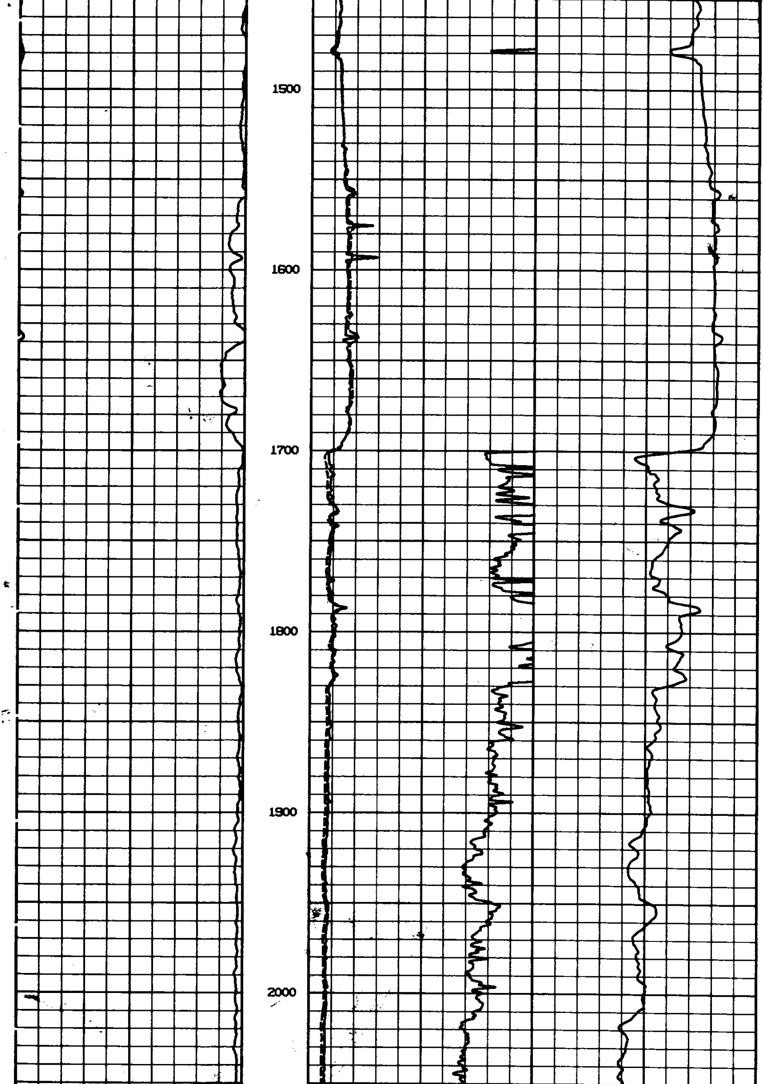
BOREHOLE CORRECTIONS: SHALLOW. MEDIUM. DEEP.

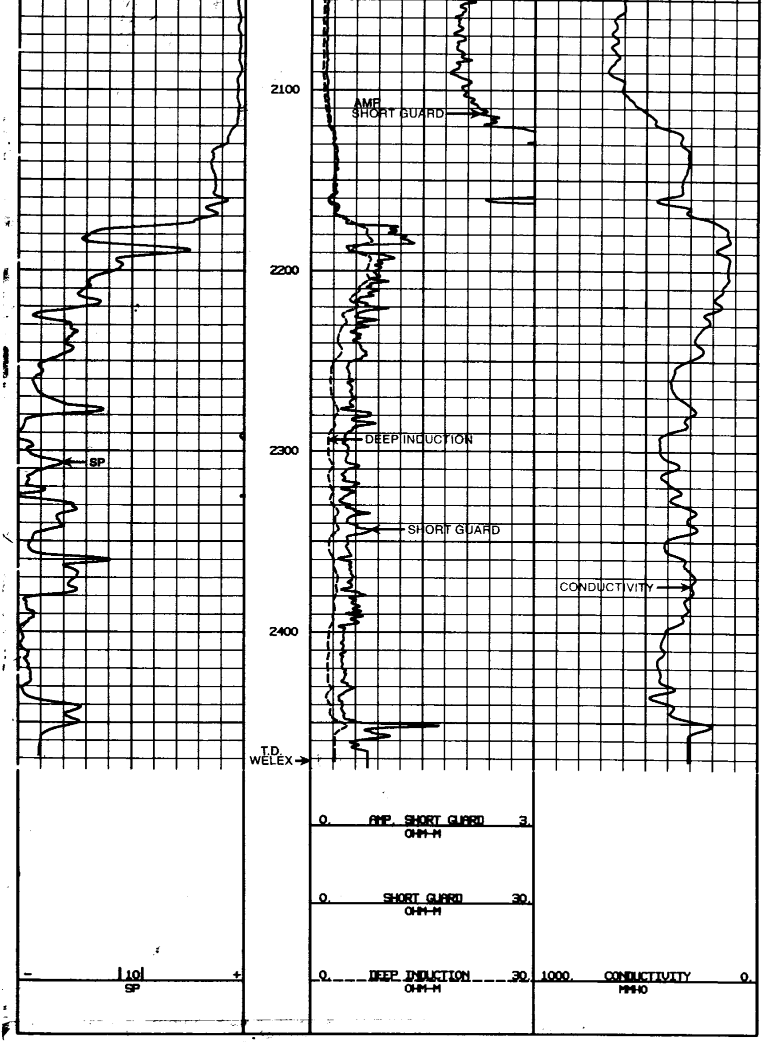
REMARKS: MAX HOLE ANGLE OF 11 DEG. AT 2400.
1 DEG. AT 587 FT.
2 DEG. AT 888 FT.
CASEING CHECK SHOWED 486 AND ON MAIN SOMETHING HAPPENED 486 ON CASE

WELEX DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS, OR RECOMMENDATIONS WHICH MAY BE GIVEN BY WELEX PERSONNEL OR WHICH MAY APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, OR CONVERSIONS, OR RECOMMENDATIONS AGREES THAT WELEX IS NOT RESPONSIBLE, EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFULL MISCONDUCT FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.









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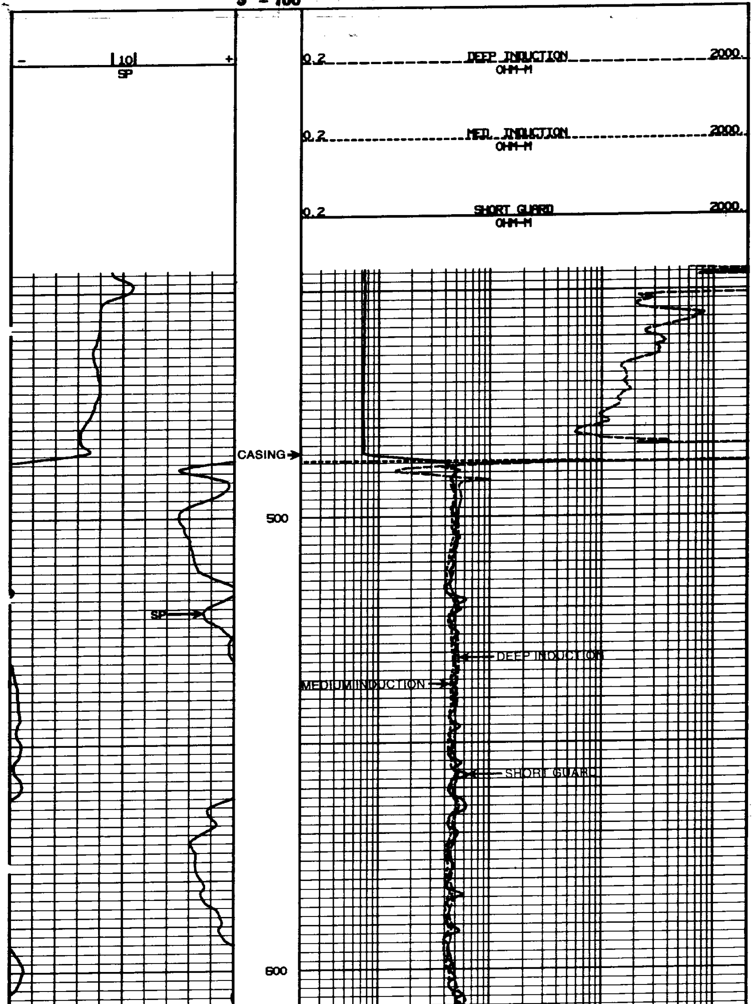
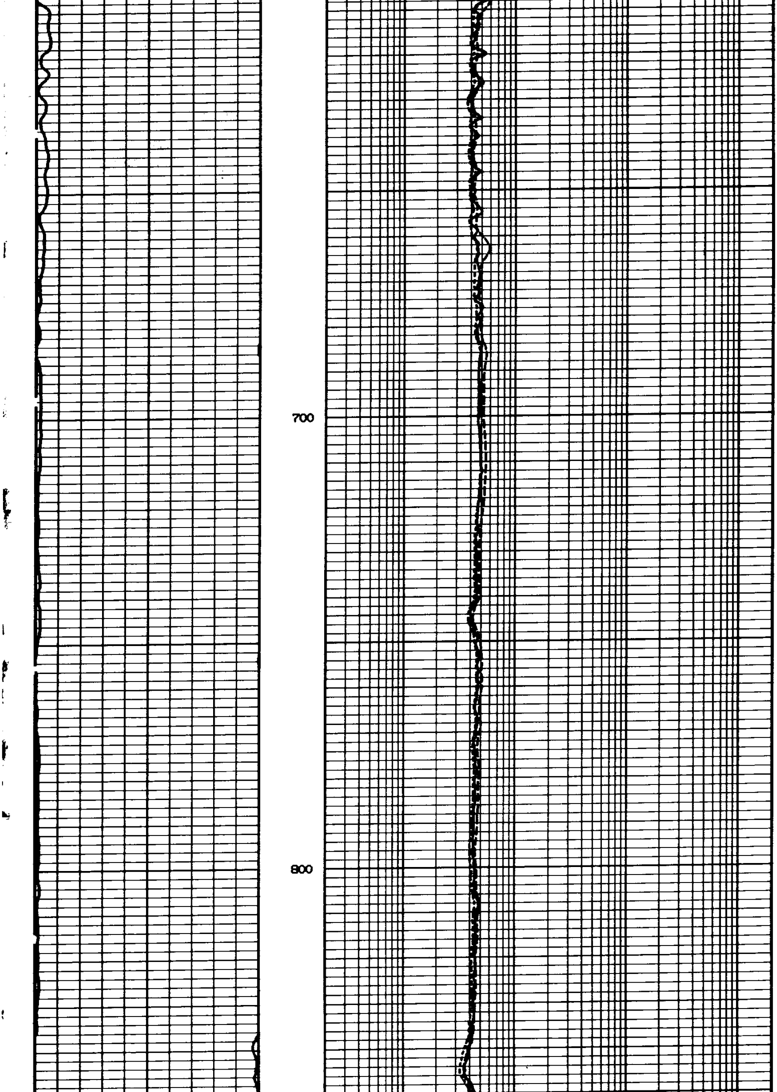
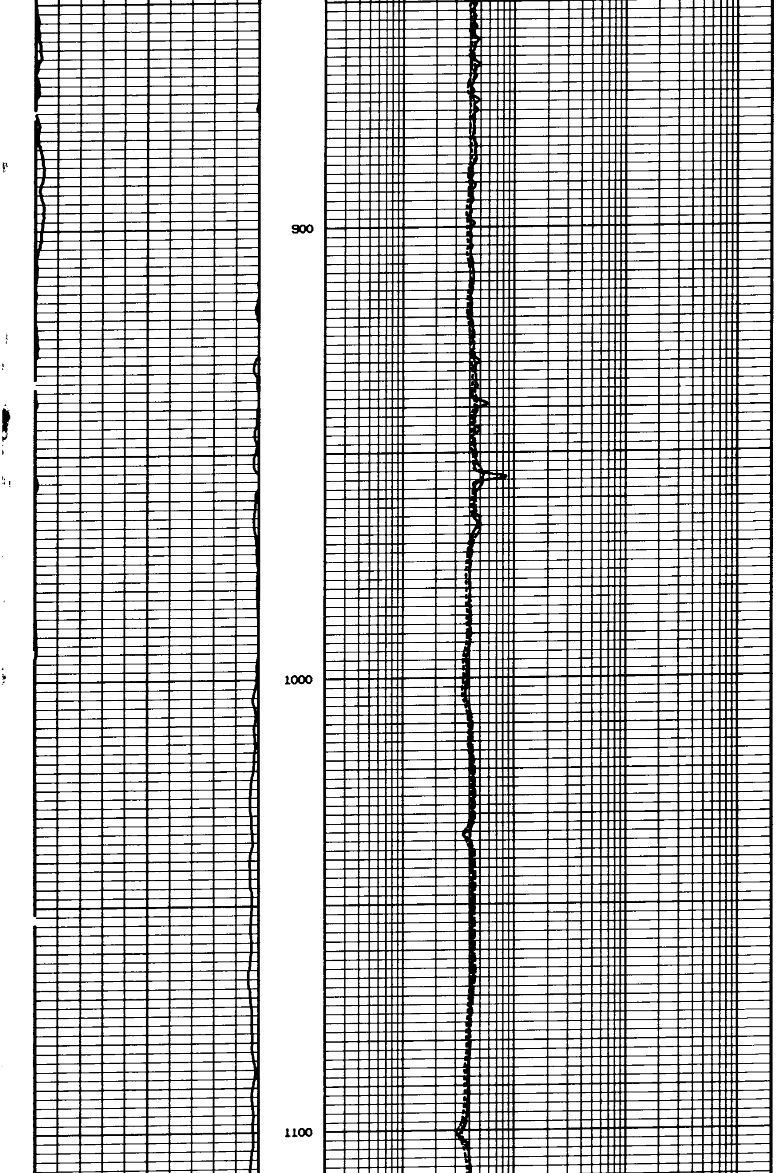
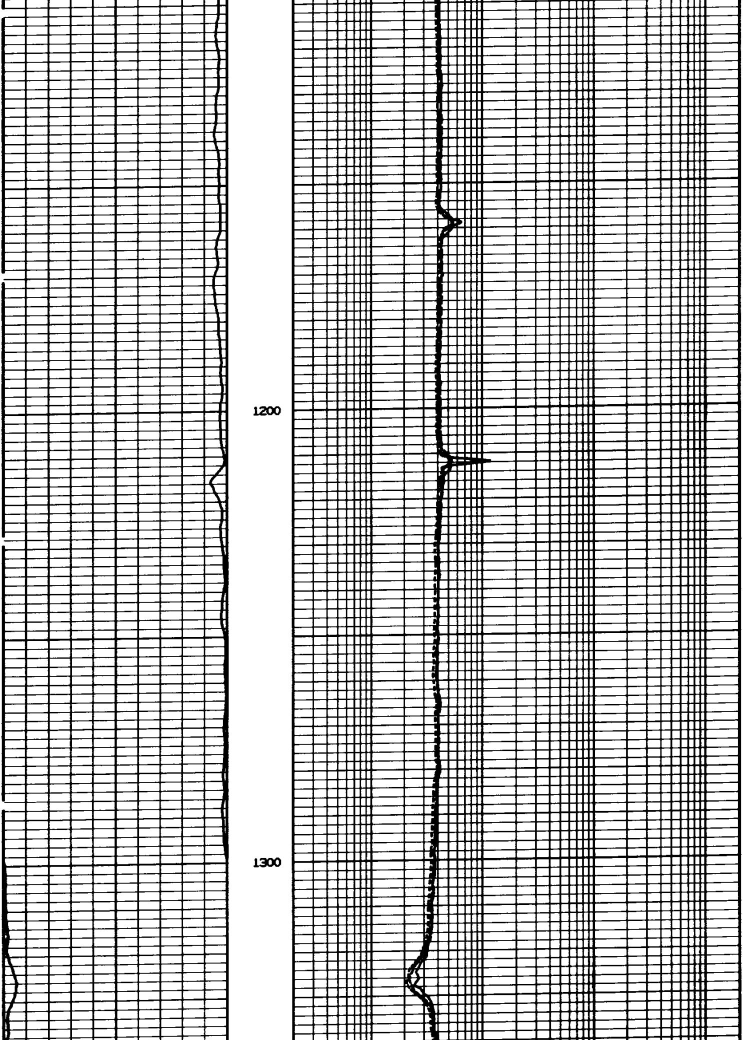
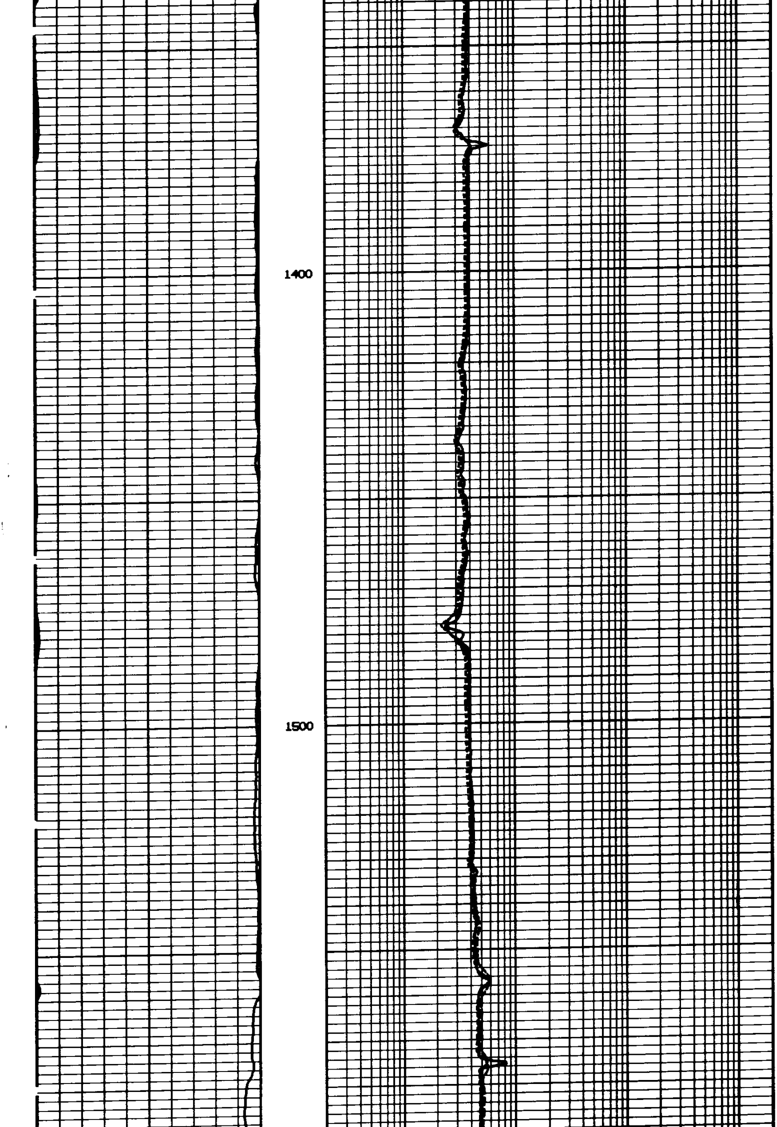
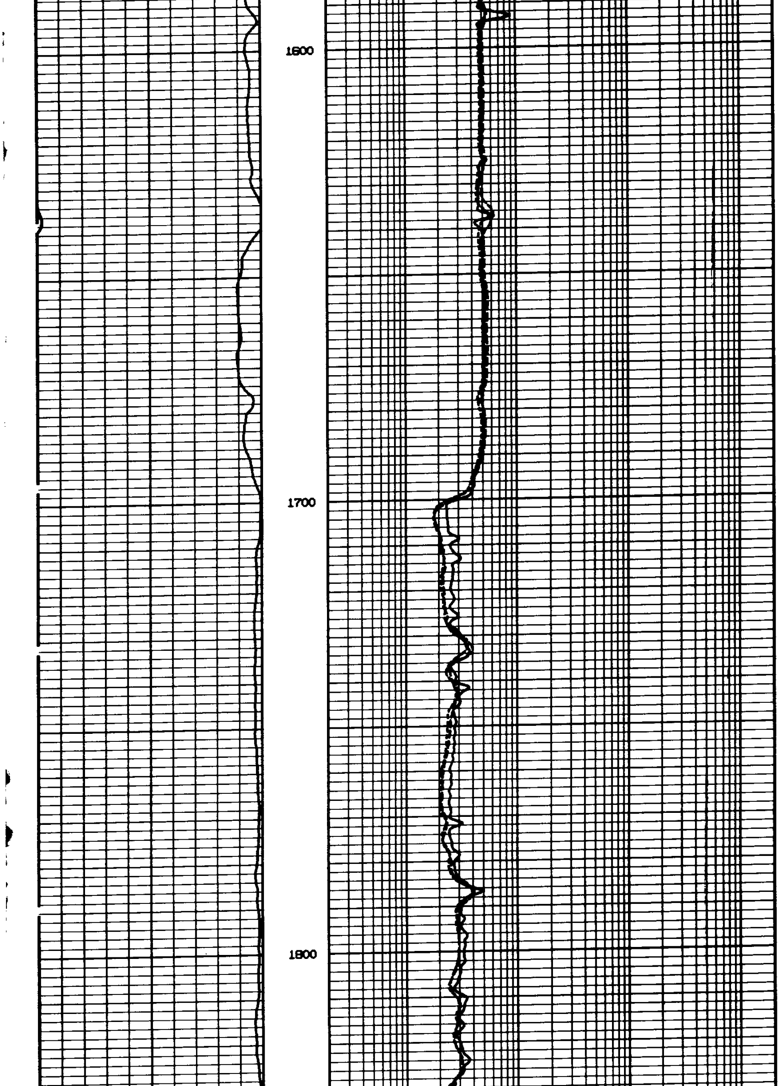


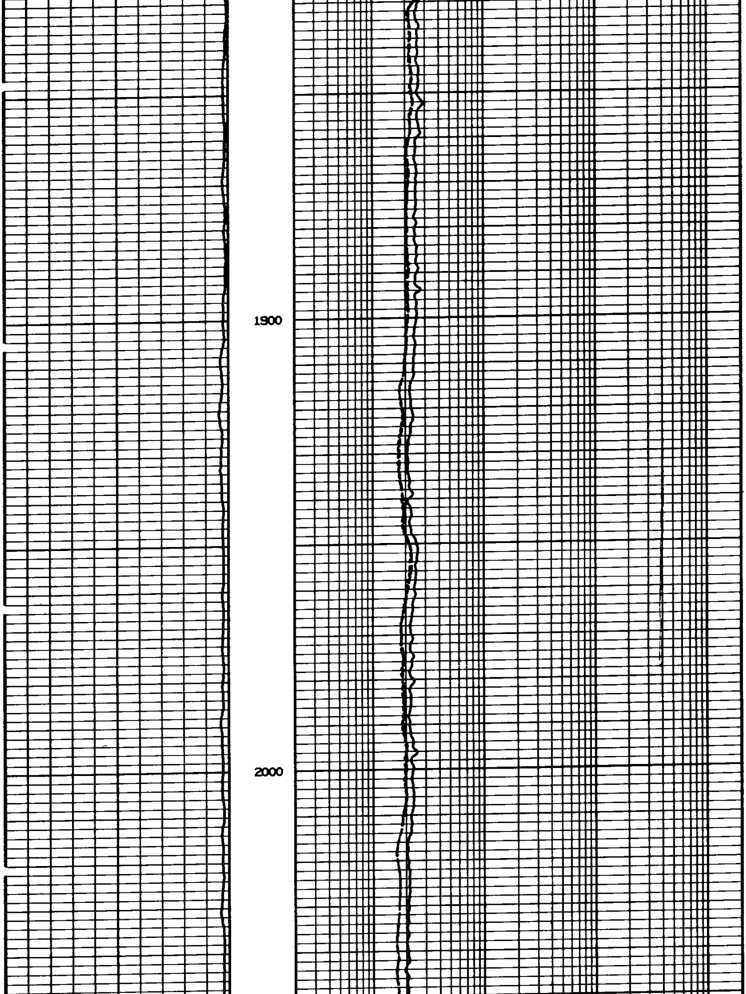


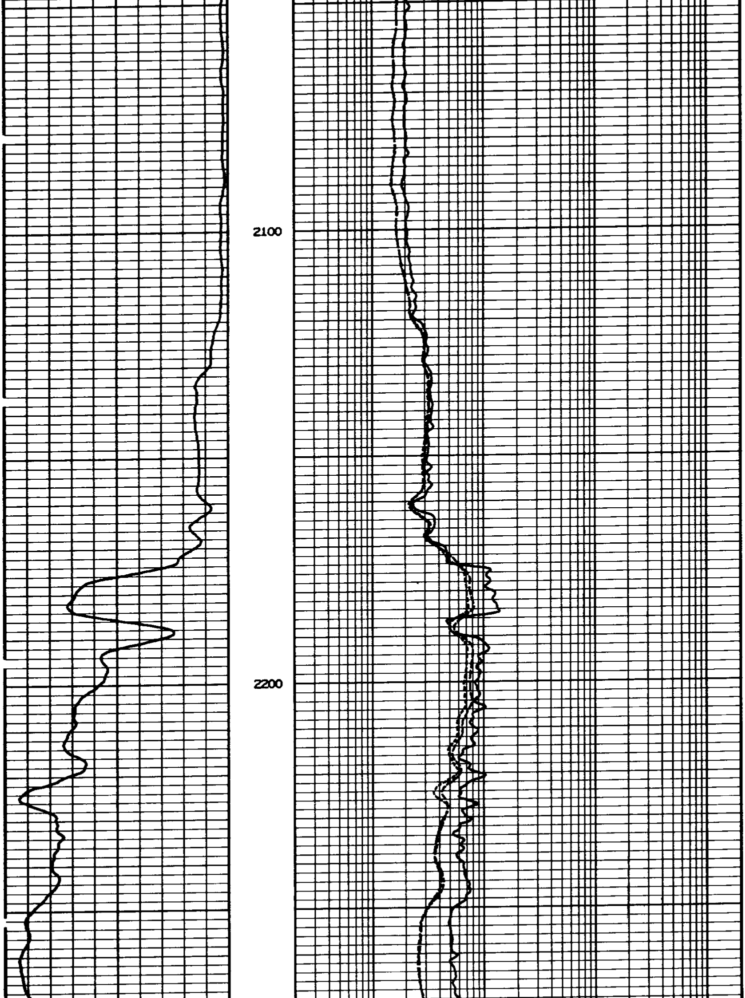


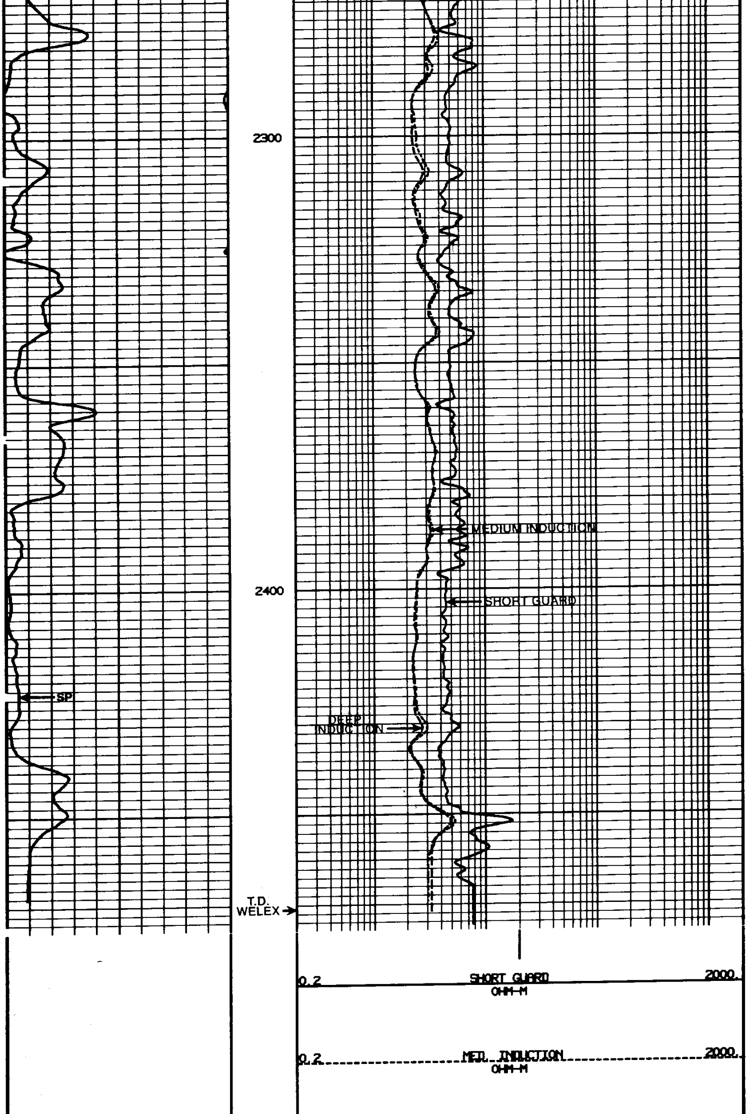












– 10 +
SP

0.2 DEEP INDUCTION 2000.
OHM-M

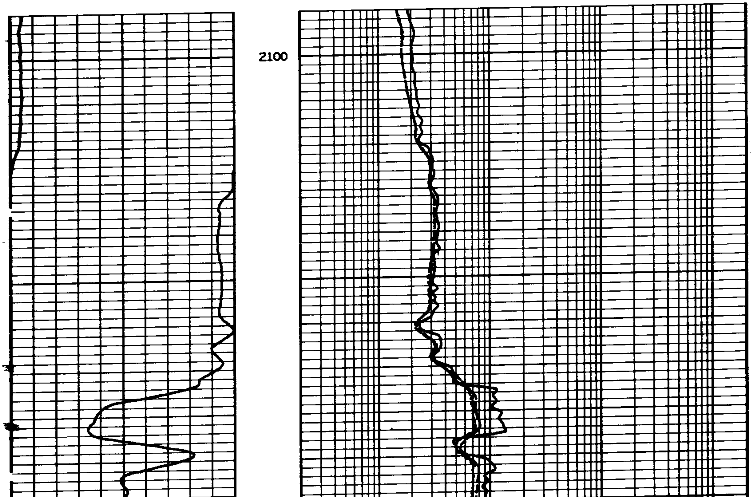
REPEAT SECTION

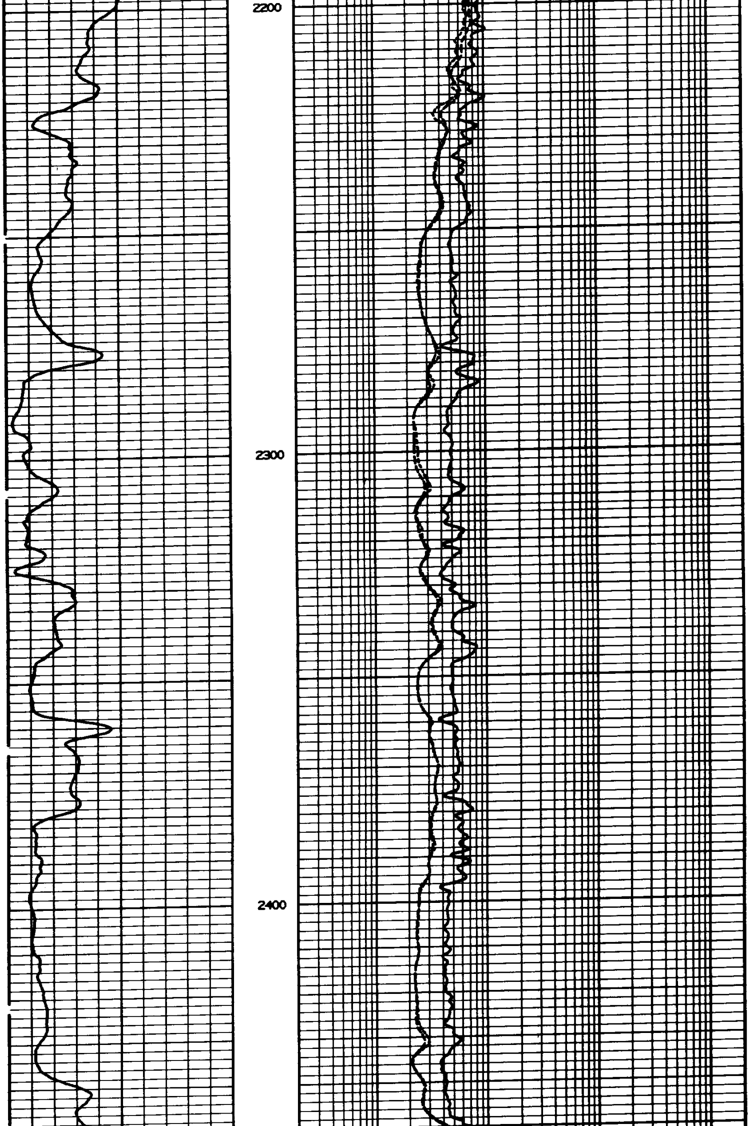
0.2 SHORT GUARD 2000.
OHM-M

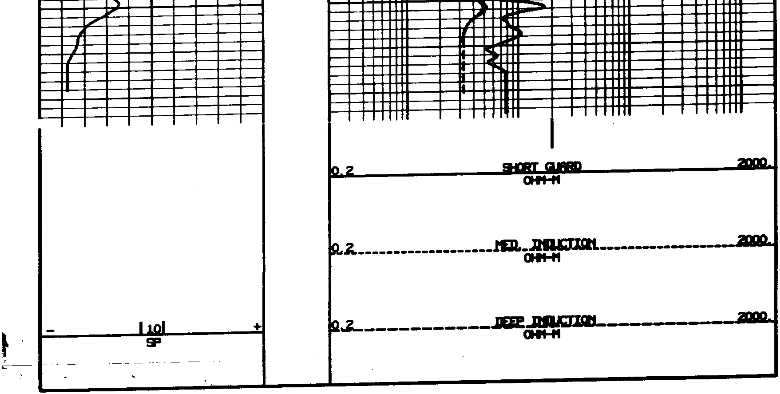
0.2 MED. INDUCTION 2000.
OHM-M

– 10 +
SP

0.2 DEEP INDUCTION 2000.
OHM-M







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                BEFORE LOG  FIELD CALIBRATION SUMMARY

PERFORMED   11/ 03/ 87    LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                        DEEP INDUCTION            MEDIUM INDUCTION
    ITEM            TOOL VALUE   ENG. UNITS   TOOL VALUE   ENG. UNITS
 TOOL ZERO,H              20       0.8326           27       1.9427
 TOOL ZERO,L               1       0.2447            4       1.6928
 INT. CAL.,H           10158       530.19         6470        506.7
 INT. CAL.,L            1724       529.64         1098       506.02
 NORMALIZER,H                      0.0416                     0.072
 NORMALIZER,L                      0.2447                    0.4232

SER # 98862      MOD. # 280    SRC. # 0          FLD CAL. # 0
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                BEFORE LOG  FIELD CALIBRATION SUMMARY

PERFORMED   11/ 03/ 87    LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                        DEEP INDUCTION          MEDIUM INDUCTION
    ITEM              FIELD        SHOP         FIELD        SHOP
 TOOL ZERO           0.8326         0.        1.9427          0.
 INT. CALIB.         530.19       515.38       506.7      502.03
 MANDREL ERROR       0.8326                   6.9793

SER # 98862      MOD. # 280    SRC. # 0          FLD CAL. # 0
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                SHORT GUARD(NORMAL) BEFORE SURVEY CALIBRATION SUMMARY

PERFORMED   11/ 03/ 87    LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                  MEASURED CALIBRATED UNITS
LOW INT CAL         1.9134  1.9867    OHMM
HIGH INT CAL        198.17  198.86    OHMM
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SER # 67279        MOD. # 478      SRC. # 0            FLD CAL. # 0


                        SHOP CALIBRATION SUMMARY

PERFORMED   11/ 03/ 87     LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87
                             DEEP INDUCTION           MEDIUM INDUCTION
      ITEM               MEASURED    CALIBRATED     MEASURED    CALIBRATED
 TOOL ZERO               0.9097           0.        2.0014           0.
 INT. CALIB.             511.33       515.30        498.65       502.03
 WHEEL                    496.2       500.15        496.97       500.33
 MANDREL ERROR                        0.8326                     6.9793


SER # 98862        MOD. # 280      SRC. # 0            FLD CAL. # 0


                  SHORT GUARD(NORMAL) SHOP CALIBRATION

PERFORMED   10/ 13/ 87     LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                        MEASURED    CALIBRATED    UNITS
SHOP CAL LOW             1.6374          2.       OHMM
SHOP CAL HIGH            163.74        200.       OHMM
INTERNAL CAL LOW         1.6258       1.9857      OHMM
INTERNAL CAL HIGH         162.8       198.65      OHMM

SER # 67279        MOD. # 478      SRC. # 0            FLD CAL. # 0


               SHORT GUARD(NORMAL) AFTER SURVEY CALIBRATION

PERFORMED   11/ 03/ 87     LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87

                   BEFORE     AFTER    UNITS
LOW INT CAL         1.9134    1.858    OHMM
HIGH INT CAL        198.17   197.32    OHMM

SER # 67279        MOD. # 478      SRC. # 0            FLD CAL. # 0


                AFTER  LOG  FIELD CALIBRATION SUMMARY

PERFORMED   11/ 03/ 87     LAST SHOP CALIB   10/ 13/ 87
PROGRAM VERSION V1.87
                             DEEP INDUCTION           MEDIUM INDUCTION
      ITEM                  AFTER       BEFORE        AFTER       BEFORE
 TOOL ZERO               0.8326           0.        1.9428           0.
 INT. CALIB.             526.55       530.19        502.02        508.7
 MANDREL ERROR           0.8326                     6.9793


SER # 98862        MOD. # 280      SRC. # 0            FLD CAL. # 0


                  ENG V1.87 08/06/85 DUAL INDUCTION ACOUSTIC

SERVICE ID TRK  UNIT       SCL          RBASE TYPE STYP OFFL IFFL   OFF  DCH CVC
                        L          R     L R                                 1 2
BHV     25  1  CUBFT       0.        10.  0 0    9  LIN   0.    0.     0. 15 NQQ
DCAL     0  4  INCH       -5.         5.  0 0    0  LIN 0.25    0.     0.  0 NNN
AHV     26  1  CUBFT      10.         0.  0 0    9  LIN   0.    0.     0.  0 NQQ
SP      12  1   MV         0.       100.  Y Y    4  LIN 0.25 3.75      0.  6 YYY
SPU      2  1   MV         0.       100.  Y Y    4  LIN   0.    0.     0.  0 NNN
F       11  4              2.     20000.  0 0    0  LOG 1.25    0.     0.  4 QQQ
RWA     13  1  OHM-M       0.         3.  0 1    2  LIN  0.5    0.     0. 11 QQQ
BSIZ     0  1  INCH        6.        16.  0 0    0  LIN   0.    0.     0.  0 NNN
TENS    10  3           5000.         0.  1 1    0  LIN   0. 0.75      0. 13 NQQ
RXRT     0  1              1.6      -0.4  0 0    0  LIN   0.    0.     0.  0 NNN
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                              ENG V1.87 08/06/85 DUAL INDUCTION ACOUSTIC

SERVICE ID TRK  UNIT       SCL            RBAGE TYPE STYP OFFL IPFL    OFF    DCH CVC
                         L          R     L R                                     1 2
CILD     22  3  MMHO    1000.         0.  1 0    0   LIN   0.  1.75      0.   7  YQQ
ILDE     10  2  OHM-M      0.        30.  0 1    2   LIN   0.    0.      0.   0  NQN
ILD       4  4  OHM-M     0.2      2000.  0 1    0   LOG   0.    0.      0.   1  NNM
ILME      0  2  OHM-M      0.        30.  0 1    2   LIN   0.  1.75      0.   0  QQQ
ILM       5  4  OHM-M     0.2      2000.  0 1    0   LOG   0.    0.      0.   2  NFF
GLSE     19  2  OHM-M      0.        30.  0 1    2   LIN   0.  1.25      0.   9  YQN
GLS       6  4  OHM-M     0.2      2000.  0 1    0   LOG   0.    0.      0.   3  NYY
GLSA     20  2  OHM-M      0.         3.  0 0    0   LIN   0.    0.      0.  10  YQQ
DT        9  3  US/FT    150.        50.  1 1    0   LIN   0.    0.      0.  16  QQQ
VPHI     29  3    %       45.       -15.  1 0    0   LIN   0.    0.      0.   0  QQQ
TDI      30  3            10.         0.  0 0    9   LIN   0.    0.      0.  12  NQQ
PAMP      0  2             0.      1000.  0 0    0   LIN   0.  1.25      0.   0  NNN
APAM      0  2             0.       100.  0 0    0   LIN   0.    0.      0.   0  NNN
FAMP      0  2             0.      1000.  0 0    0   LIN   0.  1.25      0.   0  NNN
TT        0  1  USEC     400.       200.  0 0    0   LIN   0.    0.      0.   0  NNN
CALI      1  1  INCH       6.        16.  1 1    0   LIN 0.25  3.75      0.   5  QQQ
```

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                              ENG V1.87 09/06/85 DUAL INDUCTION ACOUSTIC
                                          TOOL TABLE
SUB  SERIAL #  MODEL SOURCE #  CALB #   NRM1     INT1  NRM2      INT2  DLY   TCH
DIL  90062     280   0         0
 CILD                                  0.24473     0 0.04163      0    9.  12.13
 ILME                                   0.4232     0 0.07195      0    6.   8. 9
 SP                                         0.     0       0.     0    0.  22. 0
GLSE 67279     470   0         0       14.2284     0       0.     0    0.   3. 5
MGDE 0         0     0         0            0.     0       0.     0    0.   4. 6
AVL  213213    200   0         0
                                            0.     0       0.     0  35.6  20.21
 DT                                       0.25     0       0.     0    0.  24. 0
 PAMP                                     0.25     0       0.     0    0.  25. 0
 FAMP                                    432.5     0       0.     0    0.   0. 0
 TT                                         0.     0       0.     0  37.5  18. 0
NEU  0         0     0         0            0.     0       0.     0   30.  17. 0
GR   0         0     0         0       0.00221  4600       0.     0  40.3  16. 0
CALI 123       123   0         0            0.     0       0.     0    0.  22. 0
CCL  0         0     0         0        7.9369  2101       0.     0    0.  A6. 0
TENS 1888      0     0         0            0.     0       6.     0    0.   0. 0
TEMP 0         0     0         0            0.     0       0.     0    0.   0. 0
GPC1 0         0     0         0            0.     0       0.     0    0.   0. 0
GPC2 0         0     0         0            0.     0       0.     0    0.   0. 0
```

-end-