FORM 925317

Western Atlas International

Atlas Wireline Services

Dual Induction Focused Log

FILE NO.

API NO.

5" = 100'

COMPANY ARCO OIL & GAS COMPANY

WELL CFW 12 15 64

FIELD MIST

COUNTY COLUMBIA STATE OREGON

LOCATION: 1999' S. & 350' E. FROM THE N.W. CORNER OF:

SEC 15 TWP 6N RGE 5W

Other Services

CDLC/CN
BHC/AL
SWC

Permanent Datum GL Elev 1363'

Log Measured from KB 10 Ft Above Permanent Datum

Drilling Measured from KB

Elev.
KB 1373'
DF
GL 1363'

Date	8 22 88	8 21 88		
Run No.	ONE	TWO		
Service Order	159040	159042		
Depth — Driller	1445'	1950'		
Depth — Logger	1440'	1946'		
Bottom Logged Interval	1438'	1944'		
Top Logged Interval	666'	1326'		
Casing — Driller	9 5/8" @ 668'	7" @ 1332'	@	@
Casing — Logger	666'	1326'		
Bit Size	8 1/2"	8 1/2" X 6 1/4" @ 1438'		
Type Fluid in Hole	GEL/WATER	GEL/WATER		
Density and Viscosity	10.2 | 45.5	10.0 | 41	|	|
pH and Fluid Loss	9.5 | 8.0 cc	9.5 | 7.8 cc	| cc	| cc
Source of Sample	FLOWLINE	MUD PIT		
Rm @ Meas. Temp.	1.25 @ 60 °F	1.50 @ 80 °F	@ °F	@ °F
Rmf @ Meas. Temp.	1.05 @ 60 °F	1.30 @ 80 °F	@ °F	@ °F
Rmc @ Meas. Temp	1.60 @ 60 °F	2.10 @ 80 °F	@ °F	@ °F
Source of Rmf and Rmc	M | M	M | M	|	|
Rm @ BHT	0.70 @ 106°F	1.11 @ 108°F	@ °F	@ °F
Time Since Circ.	3 HRS.	3 HRS.		
Max. Rec. Temp. Deg. F.	106 °F	108 °F	°F	°F
Equip. No. and Location	6406 | SAC.	6406 | SAC.	|	|
Recorded By	M. HINDS	M. HINDS		
Witnessed By	MR. DAHLEEN			

FOLD HERE

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

Western Atlas International
A Litton/Dresser Company

ATLAS
WIRELINE
SERVICES

REMARKS RUN (1)

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIAL NO.	SERIES NO.	POSITION
1	1	DIFL	33304	1503	1.5 SO
1	1	AC	79726	1509	CENT
1	1	GR	60484	1309	CENT
1	1	CAL	79040	4209	VAR

[illegible] RUN [illegible] 2.

EQUIPMENT DATA

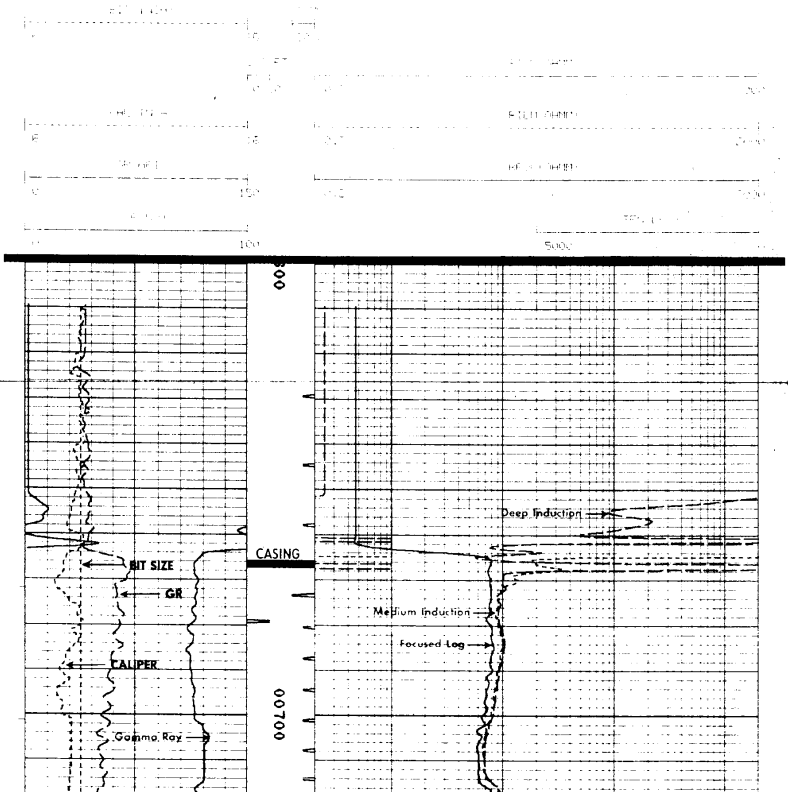
RUN	TRIP	TOOL	SERIAL NO.	SERIES NO.	POSITION
2	2	DIFL	33304		FREE
2	2	GR	60484		CENT
2	2	CAL	79092		VAR

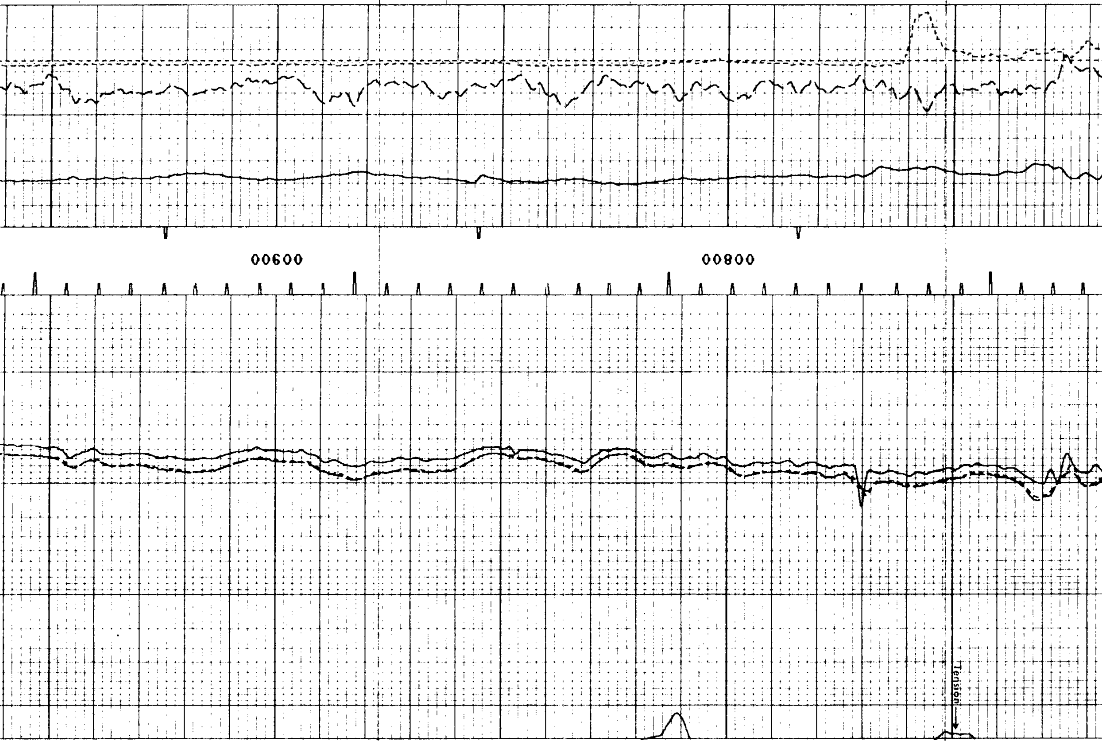
```
                    FT.IN
            8.      FT.IN
            8.      FT.IN
            8.      FT.IN
GR        +1.6      FT.IN
           91.8      .IN
                     .IN
                     .IN
```

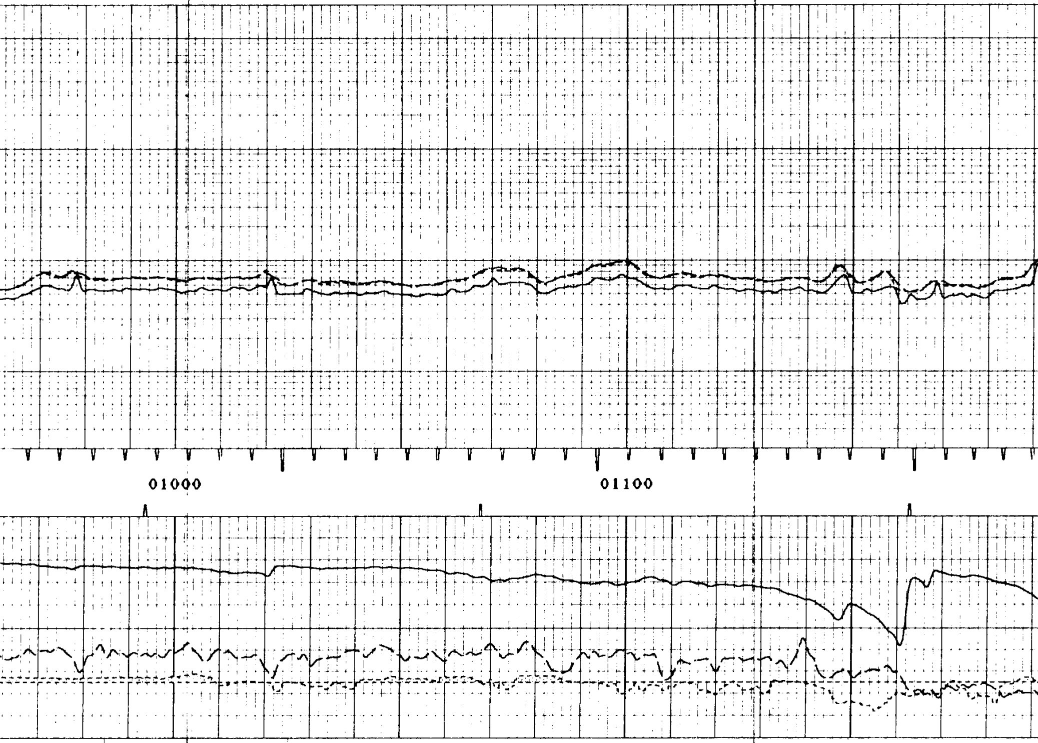
PARAMETERS

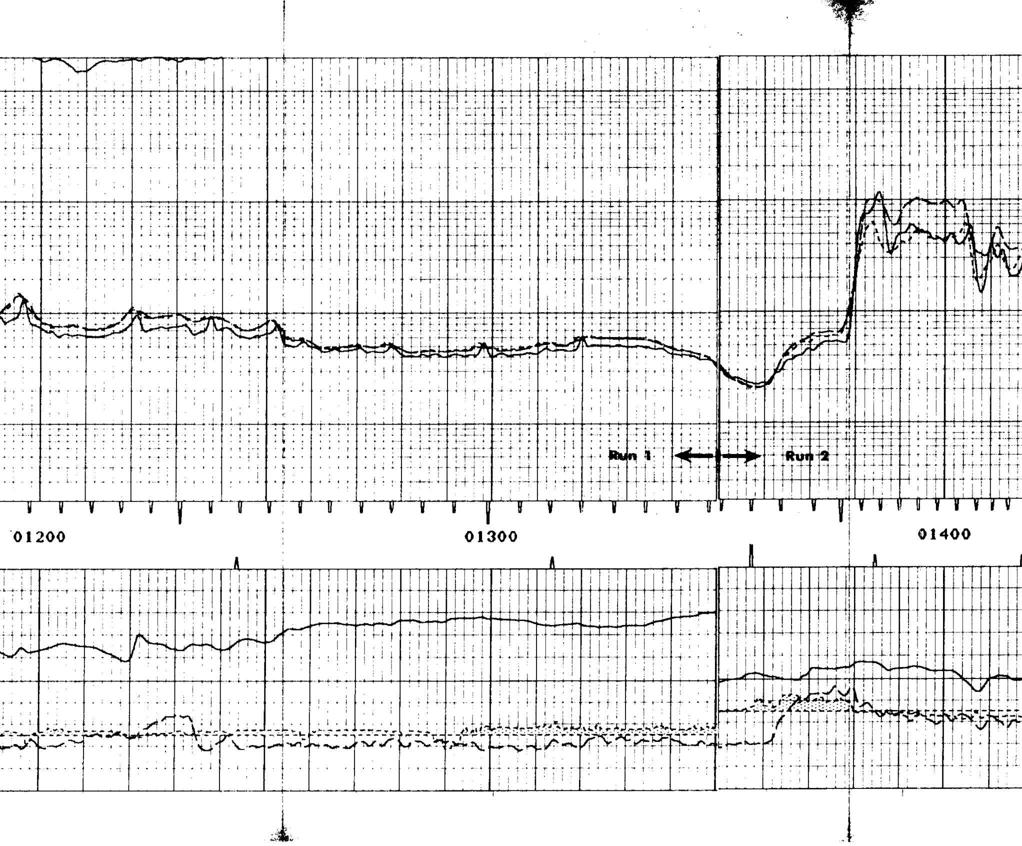
*** [illegible] ***

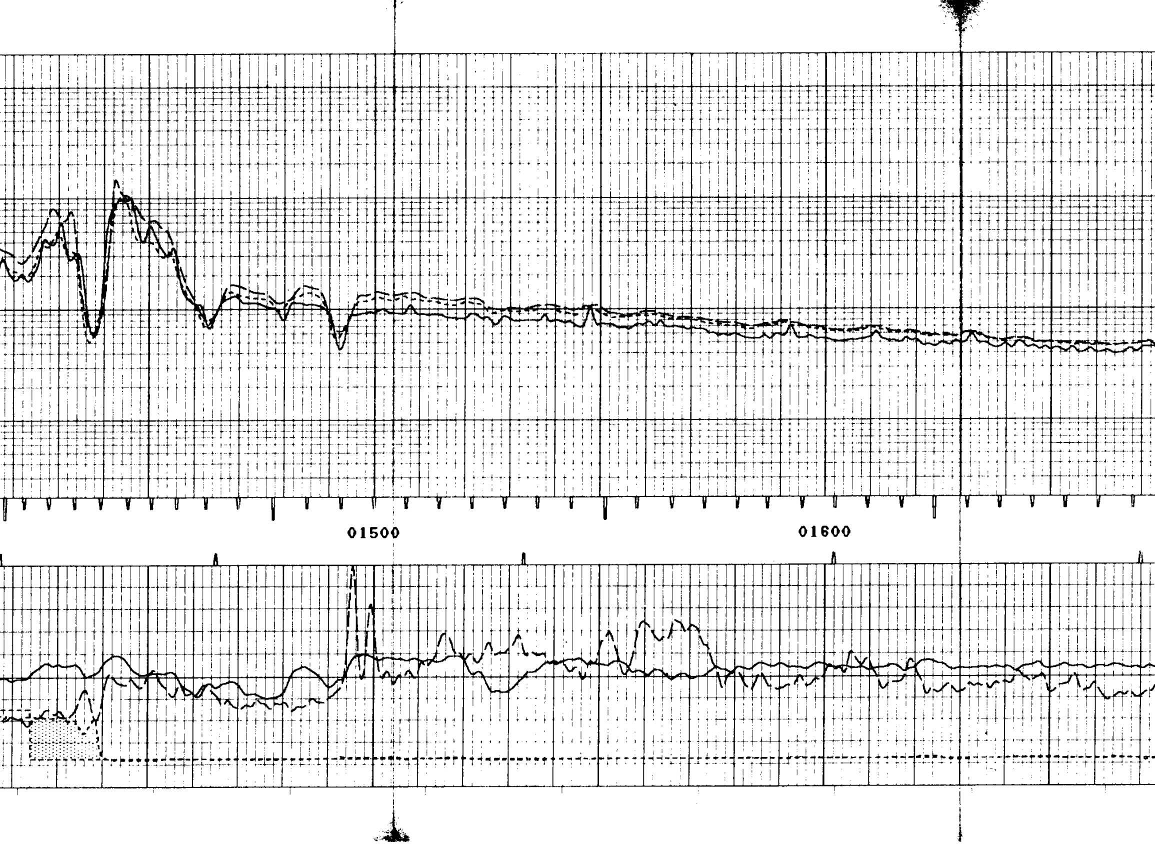
[illegible]

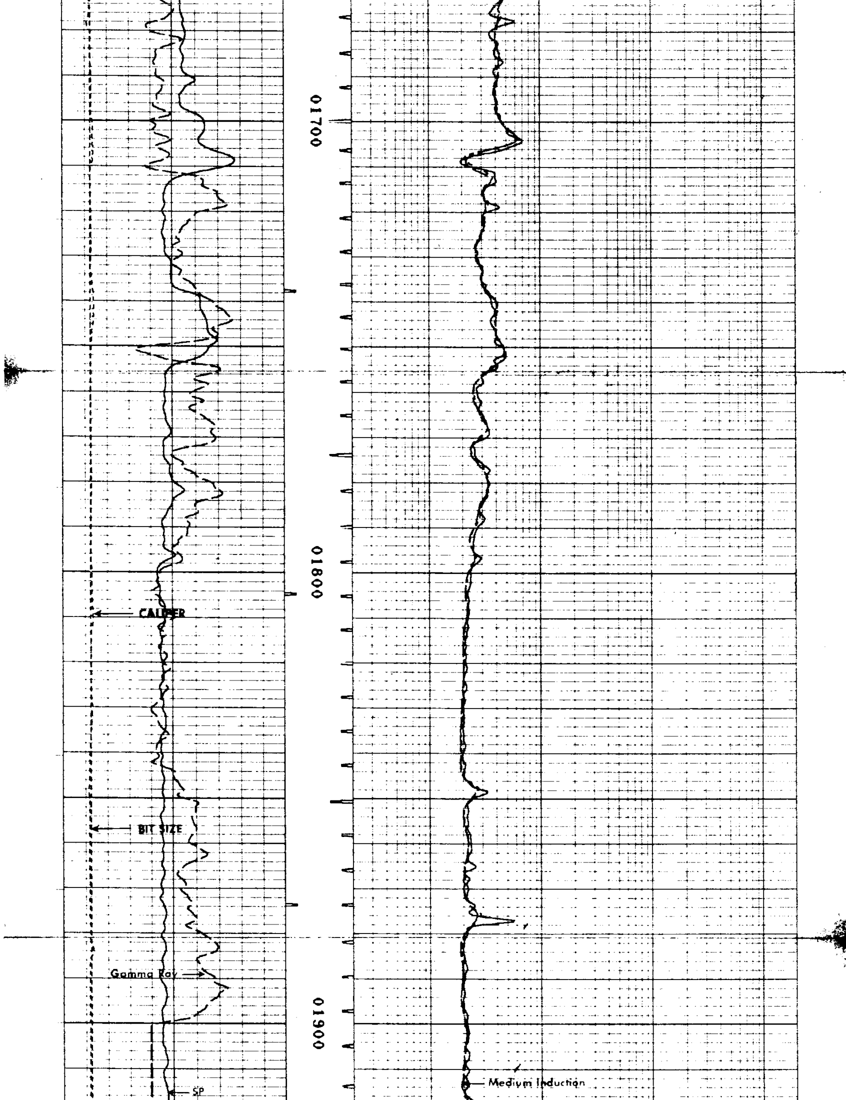


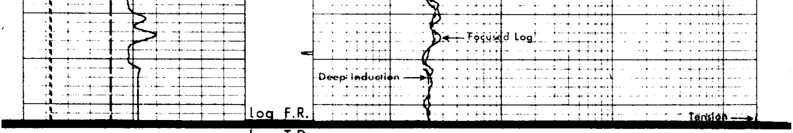












Log T.D.

BIT(INCH)

5 15

VOL(CUFT)

RILD(OHM)

CAL(INCH)

5 15

RILM(OHM)

GR(API)

0 150

RFOC(OHM)

0 100

COMPANY: ARCO OIL & GAS CO.　RUN: 2

WELL NAME: 12-15-64　TRIP: 2

SERVICE: [illegible]　FILE: 6　DATE: [illegible]　TIME: 13:17:11

REVISION: FS/SAL REV G303 VER+3　MODE: RECORD

REPEAT SECTION

Run 2

BIT(INCH)

5 15

TT(MS)

30 0

VOL(CUFT)

0 30

RILD(OHM)

0.2 2000

CAL(INCH)

5 15

RILM(OHM)

0.2 2000

GR(API)

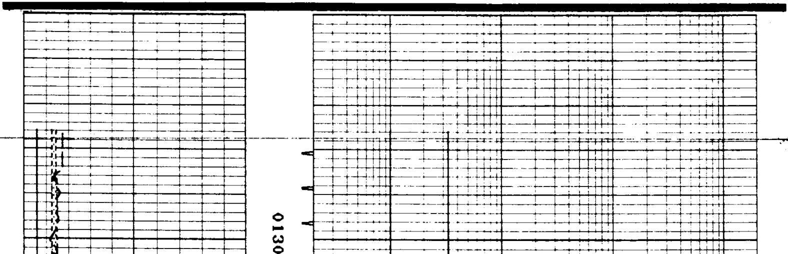
0 150

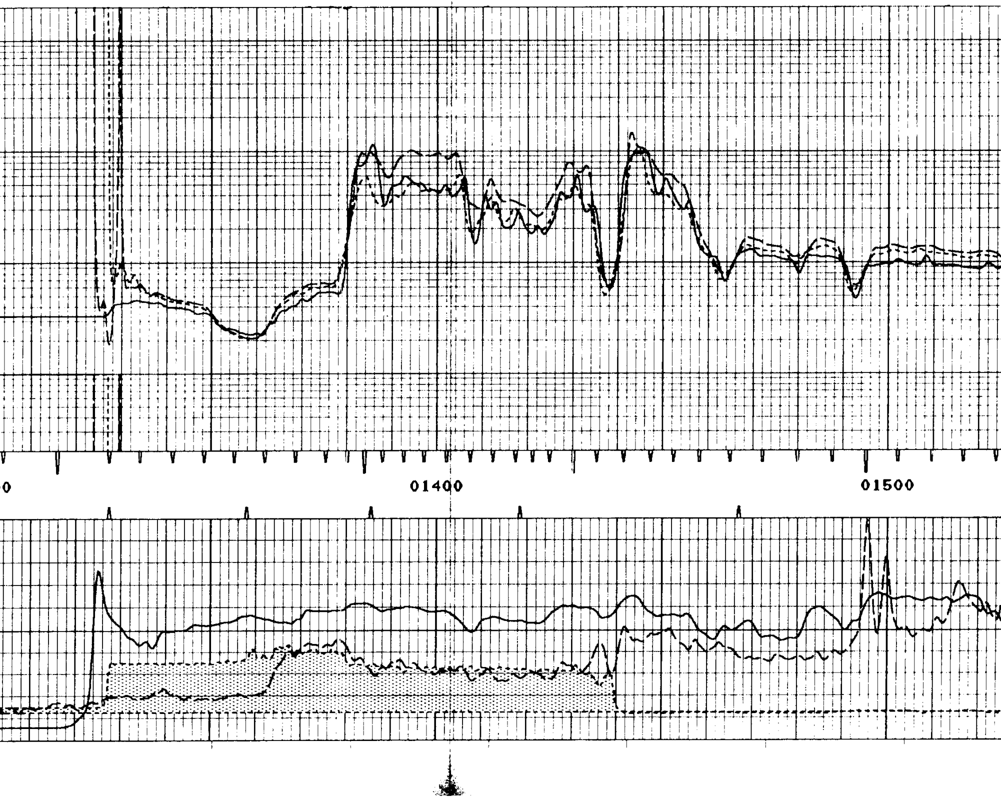
RFOC(OHM)

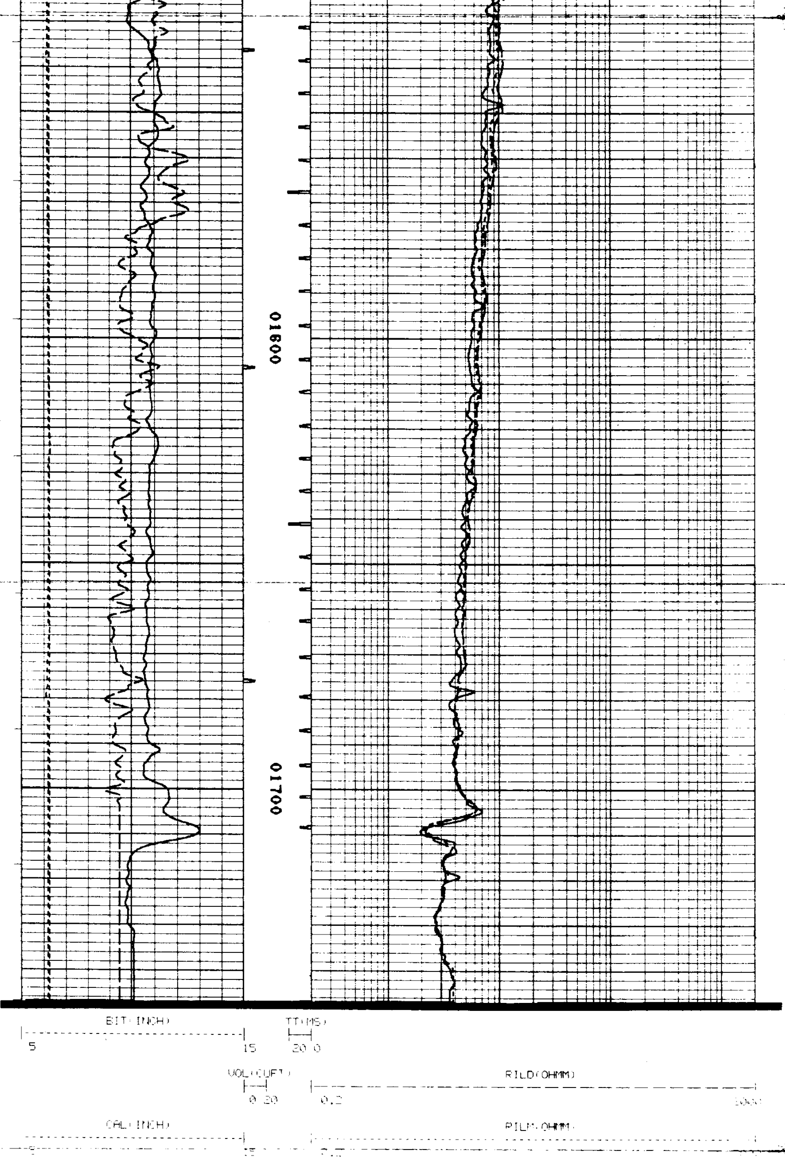
0.2 2000

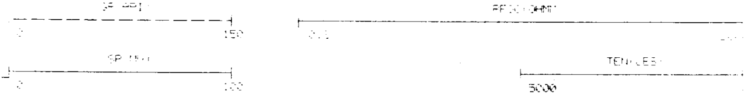
0 100

5000









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LOG NAME DIFL    ASSET NO. ??TO4    UNIT NO. [illegible]
CALIBRATION ENTERED ON [illegible] 24 ?? AT 15:14:24

CURVE  MILLIVOLTS     SCALING FACTORS     ENGINEERING VALUES   UNITS
        LOW   HIGH     ADD.     MULT.       LOW      HIGH
------ ------ ------ ------------------- --------- ----------- ----

   DATE 0? 18 ??          CALIBRATION          [illegible]

ILD      0.3   4??.?    1.050    [illegible]    [illegible]   [illegible] MMHO
ILM      ?.3   ?08.?    [illegible] [illegible] [illegible]   [illegible] MMHO
RFOC     2.5   40?.0   -1.559    ?.4??          [illegible]   [illegible] MMHO

   DATE 0? 18 ??     PRIMARY VERIFICATION      [illegible]

ILD     -0.?   4??.?    1.0??    [illegible]    [illegible]   [illegible]
ILM     -0.0   5??.?    [illegible] ????        [illegible]   [illegible]
RFOC     4.?   [illegible] -1.??? ???            [illegible]   [illegible]

   DATE 0? ?? ??     BEFORE LOG VERIFICATION      [illegible]

[illegible]
[illegible] ?.?   ???.?    [illegible]  [illegible]  [illegible]  [illegible]
[illegible] ?.?   ???.?   -?.???        [illegible]  [illegible]  [illegible]

   DATE 0? ?? ??     AFTER LOG VERIFICATION      [illegible]

ILD      ?.?   ???.?    0.??1    ?.??70       ?.?          ??? ??? MMHO
ILM      0.3   5??.?    1.??5    ?.??1?       ?.??         ??? ??? MMHO
RFOC     4.?   ???.?   -1.41?    ?.??5?       ?.??         ??? ??? MMHO


LOG NAME ????    ASSET NO. ????    UNIT NO. [illegible]
CALIBRATION ENTERED ON [illegible] 24 ?? AT 15:1?:??

CURVE  MILLIVOLTS     SCALING FACTORS     ENGINEERING VALUES   UNITS
        LOW   HIGH     ADD.     MULT.       LOW      HIGH
------ ------ ------ ------------------- --------- ----------- ----

   DATE 0? ?? ??          CALIBRATION          [illegible]

GR       ??.?   ????.?    ?.???    ?.???? [illegible]   [illegible] API

   DATE 0? ?? ??     PRIMARY VERIFICATION      [illegible]

GR       ??.?   ????.?    ?.???    ?.???? [illegible]   [illegible] API

   DATE 0? ?? ??     BEFORE LOG VERIFICATION      [illegible]

GR       ??.?   ????.?    ?.???    ?.???? [illegible]   [illegible] API

                AFTER LOG CALIBRATION      [illegible]


LOG NAME ????    ASSET NO. ????    UNIT NO. [illegible]
CALIBRATION ENTERED ON [illegible] 24 ?? AT 15:1?:??

CURVE  MILLIVOLTS     SCALING FACTORS     ENGINEERING VALUES   UNITS
        LOW   HIGH     ADD.     MULT.       LOW      HIGH
------ ------ ------ ------------------- --------- ----------- ----

   DATE 0? ?? ??          CALIBRATION          [illegible]

[illegible]

                PRIMARY VERIFICATION      [illegible]

   DATE 0? ?? ??     BEFORE LOG VERIFICATION      [illegible]
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[illegible]

DATE [illegible]

[illegible]
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        [illegible]

   [illegible]   DELAY   UNITS
   -----   -----   -----

   [illegible]        0   FT,IN
   [illegible]      6.8   FT,IN
   [illegible]      4.3   FT,IN
   [illegible]      8.1   FT,IN
   [illegible]     40.8   FT,IN
   [illegible]     51.5   FT,IN
   [illegible]     27.0   FT,IN
   [illegible]     11.0   FT,IN
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            PARAMETERS

   NAME     DEPTH INTERVAL     VALUE      UNITS
   ----     --------------     -----      -----
   A        1443 TO 1242       [illegible]

   [illegible] 1443 TO 1242    [illegible]

   [illegible] 1443 TO 1242    [illegible]

   [illegible] 1443 TO 1242    **********  [illegible]

   DEL[illegible] 1443 TO 1242  -1.000    [illegible]

   [illegible] 1443 TO 1242     0.000     [illegible]
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        [illegible] STAGE CHANGES

          *** NONE ***
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```
COMPANY:    [illegible] OIL & GAS CO.                     RUN: 1

WELL NAME:  [illegible] 13-64                             TRIP: 1

SERVICE:    [illegible]        FILE: 1                    TIME: [illegible]

REVISION:   [illegible]                                   MODE: RECORD
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REPEAT SECTION

Run 1

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        [illegible]                     [illegible]
|-------------------------------|       |----|
0                              10        [illegible]
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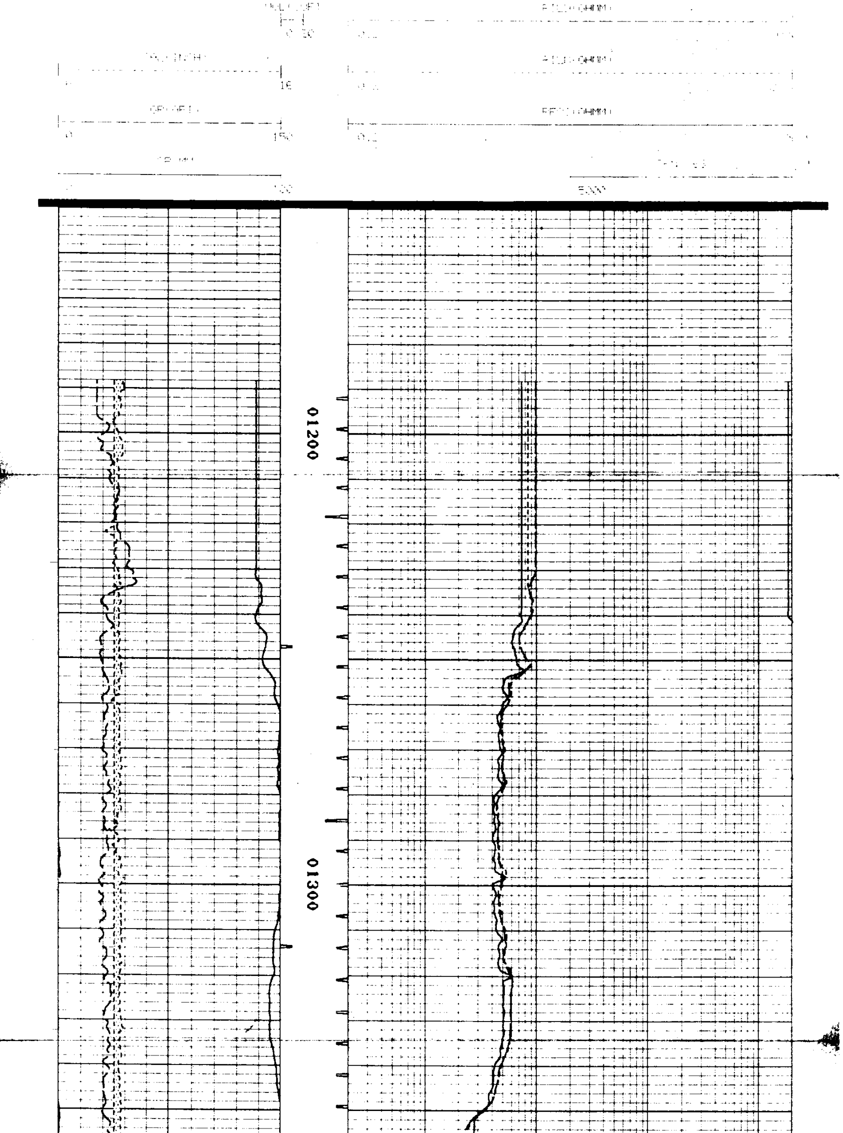

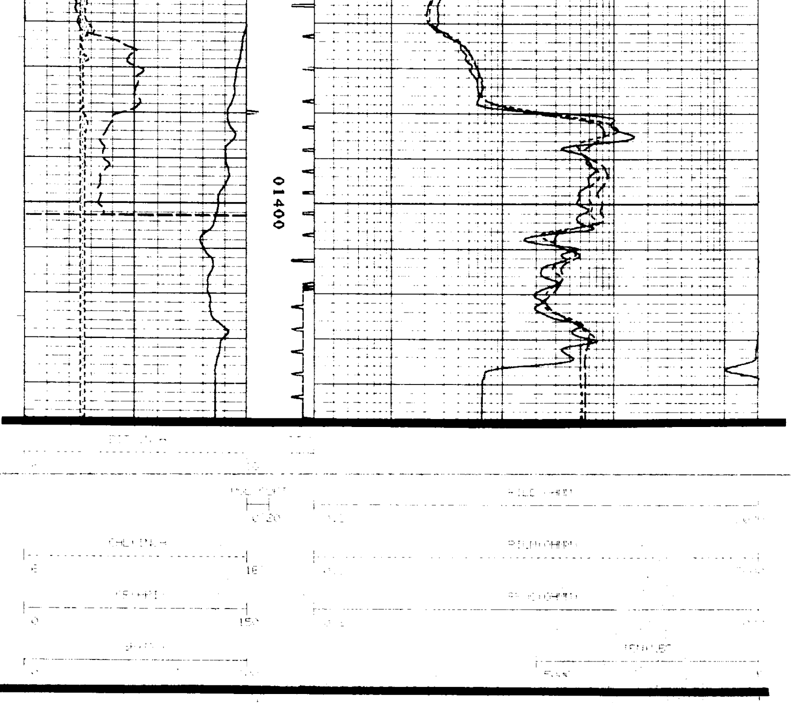

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+++++++++++++++++++++++++++++++++++++++++++++++
+    -                                        +
+  CALIBRATION [illegible]                    +
+  DATE 03 22 88          TIME [illegible]    +
+  RUN  1                 TRIP [illegible]    +
+                                             +
+++++++++++++++++++++++++++++++++++++++++++++++


       [illegible] NAME DIFL   ASSET NO. [illegible]
   [illegible] ENTERED ON  03 22 88 AT [illegible]

[illegible]   MILLIVOLTS      SCALING FACTORS      ENGINEERING VALUES   UNITS
             LOW     HIGH    ADD.     MULT.          LOW        HIGH
----    -------------- --------------------- ------------------------- ----

       [illegible] 88          CALIBRATION            [illegible]

[illegible]     [illegible]   [illegible]   1.[illegible]   [illegible]   [illegible]   [illegible] MMHO
[illegible]     [illegible]   [illegible]   [illegible]   [illegible]   [illegible]   [illegible] MMHO
                                                                        [illegible]

       [illegible] 88    PRIMARY [illegible]            [illegible]
------------------------------------------------------------------------------
[illegible]     -0.1   491.7    1.256    [illegible]    [illegible]   [illegible] MMHO
[illegible]     -0.4   506.4    3.072    [illegible]    [illegible]   [illegible] MMHO
[illegible]      4.7   503.8   -1.550    [illegible]    [illegible]   [illegible] MMHO

       DATE 03 22 88   BEFORE [illegible] VERIFICATION      [illegible]

[illegible]     -0.1   [illegible]   1.[illegible]   [illegible]   [illegible]   [illegible] MMHO
[illegible]      0.1   [illegible]   [illegible]   [illegible]   [illegible]   [illegible] MMHO
[illegible]      4.7   [illegible]  -1.[illegible]   [illegible]   [illegible]   [illegible] MMHO
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    DATE 08 22 88    AFTER LOG VERIFICATION     TIME [illegible]

[illegible]   -0.0   435.9    1.231    1.[illegible]      [illegible]   [illegible] MMHO
[illegible]    0.1   507.9    2.39[illegible]   [illegible]      [illegible]   [illegible] MMHO
[illegible]   [illegible]   481.3   -1.83    [illegible]      [illegible]   [illegible]



   [illegible] NAME OF     ASSET [illegible]
  CALIBRATION ENTERED ON  08 [illegible] 88 AT [illegible]

 RTE   READINGS SET.    SCALING FACTORS    [illegible]    [illegible]   UNITS
       LOW     HIGH    ADD.    MULT
---- ---------------- ----------------- ----------------------- ----

    DATE 08 01 88           CALIBRATION          TIME [illegible]

[illegible]       65.2   275.3    0.000    0.7041       0.288    [illegible] API

    DATE 08 01 88     PRIMARY VERIFICATION       TIME [illegible]

[illegible]      [illegible]   270.3    0.000    0.7041      [illegible]     [illegible] API

    DATE 08 22 88   BEFORE LOG VERIFICATION      TIME [illegible]

[illegible]       60.0   267.6    0.000    0.7041      [illegible]     [illegible] API

                     AFTER LOG VERIFICATION             [illegible]


     [illegible]     ASSET [illegible]

[illegible]

    DATE 08 [illegible]            CALIBRATION          TIME [illegible]

[illegible]    1482.0  3158.2    [illegible]    [illegible]       [illegible]       [illegible] INCH

                     PRIMARY VERIFICATION               [illegible]

    DATE 08 22 88   BEFORE LOG VERIFICATION     TIME [illegible]

CAL       E      5366.7    2.192    0.00[illegible]       [illegible]           [illegible] INCH

    DATE 08 22 88    AFTER LOG VERIFICATION         [illegible]

[illegible]       E      4907.[illegible]    2.103    [illegible]       [illegible]           [illegible] INCH
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