HALLIBURTON
LOGGING SERVICES, INC.

5" = 100'

DUAL INDUCTION LATEROLOG COMPENSATED SONIC LOG

COMPANY ______
WELL ______
FIELD ______
COUNTY ______ STATE ______

COMPANY NAHAMA & WEAGANT ENERGY COMPANY
WELL CEDAR ~~POINT~~ BP #14-26-64
FIELD MIST
COUNTY COLUMBIA STATE OREGON

API No. 36-009-00287
Location 1239.1' NORTH & 521' EAST
OF THE SOUTHWEST CORNER:
Sec 26 Twp 6N Rge 4W

Other Services
FED

Permanent Datum GL Elev 1037.7'
Log Measured From KB 10' Ft Above Perm. Datum
Drilling Measured From KB

Elev.: K.B. 1047.7'
D.F. –
G.L. 1037.7'

Date	9-12-91			
Run No.	ONE			
Depth—Driller	2702' MD			
Depth—Logger	2692' MD	2518' TVD		
Btm. Log Inter.	2690' MD	2516' TVD		
Top Log Inter.	CASING			
Casing—Driller	9.63" @ 520'	@	@	@
Casing—Logger	520' MD	520' TVD		
Bit Size	8.75"			
Type Fluid in Hole	GEL-POLYMER			
Dens. | Visc.	9.0+ | 51	|	|	|
pH | Fluid Loss	9.5 | 8.4 ml	| ml	| ml	| ml
Source of Sample	FLOWLINE			
R_m @ Meas. Temp.	4.0 @ 63 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	4.2 @ 58 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	4.5 @ 58 °F	@ °F	@ °F	@ °F
Source R_{mf} R_{mc}	MEAS | MEAS	|	|	|
R_m @ BHT	3.0 @ 86 °F	@ °F	@ °F	@ °F
Time Since Circ.	4.0 HOURS			
Time On Bottom	08:27			
Max. Rec. Temp.	86 °F @	°F @	°F @	°F @
Equip. | Location	7674 | BKFD	|	|	|
Recorded By	POZAS			
Witnessed By	VAUGHAN	PINOTTI		

Fold Here

Part Number 26000

Service Ticket No. L68249 API Serial No.: PGM Version:

Change in Mud Type or Additional Samples		
Date | Sample No.	|	|
Depth—Driller		
Type Fluid in Hole		
Dens. | Visc.	|	|
ph | Fluid Loss	| ml	|
Source of Sample		
R_m @ Meas. Temp.	@ °F	@ °F
R_{mf} @ Meas. Temp.	@ °F	@ °F
R_{mc} @ Meas. Temp.	@ °F	@ °F
Source: R_{mf} | R_{mc}	|	|
R_m @ BHT	@ °F	@ °F
R_{mf} BHT	@ °F	@ °F
R_{mc} BHT	@ °F	@ °F

RESISTIVITY/RWA SCALE CHANGES				COMPUTED FROM	
Type Log	Depth	Scale Up Hole	Scale Down Hole	a	m

RESISTIVITY EQUIPMENT DATA				
Run No.	Tool Type and No.	Pad Type	Tool Position	Other
ONE	DIL G-5512		S.O.	CAL #G-9204

Borehole Corrections
shallow medium deep

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.		Run No.	
Serial No.	G-3051	Serial No.		Serial No.		Serial No.	
Model No.	HA	Model No.		Model No.		Model No.	
Diameter	3.38"	No. of Cent.		Diameter		Diameter	
Detector Model No.	NA	Spacing		Log Type		Log Type	
Type	SCINT			Source Type		Source Type	
Length	4.5'	LSA	☐ Yes ☐ No	Serial No.		Serial No.	
Distance to Source	NA	FWDA	☐ Yes ☐ No	Strength		Strength	

LOGGING DATA

GENERAL				GAMMA		ACOUSTIC			DENSITY			NEUTRON		
Run	Depths		Speed	Scale		Scale			Scale			Scale		
No.	From	To	Ft./Min.	L	R	L	R	Matrix	L	R	Matrix	L	R	Matrix
ONE	TD	CSG	45	0	150									

a = m = Δt_{sh} = Δt_{fl} = ρ_{fl} =

REMARKS:

CASED HOLE PARAMETERS	
From:	To:
Bit Size	
Csg. O.D.	
Csg. Wt.	

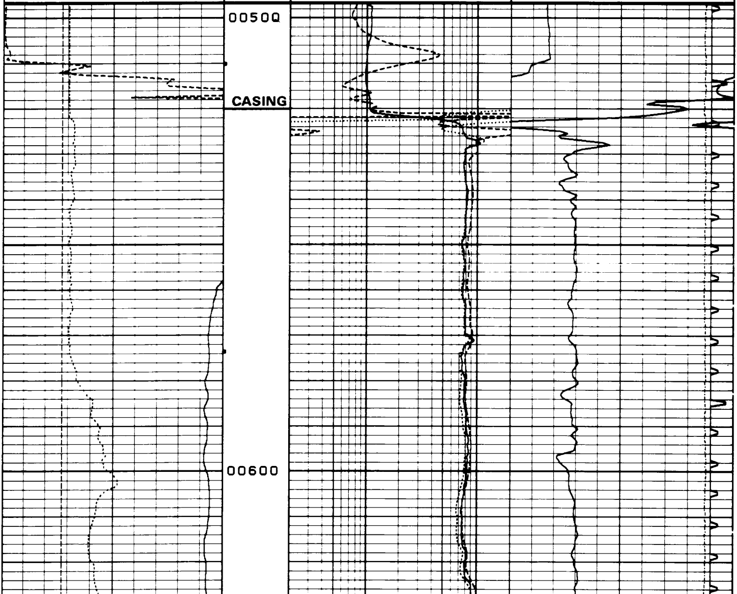
Halliburton Logging Services, Inc. does not guarantee the accuracy of any interpretation of log data, conversion of log data to physical rock parameters, or recommendations which may be given by Halliburton Logging Services, Inc. personnel or which may appear on the log or in any other form. Any user of such data, interpretations, conversions or recommendations agrees that Halliburton Logging Services, Inc. is not responsible except where due to gross negligence or willful misconduct, for any loss, damages or expenses resulting from the use thereof.

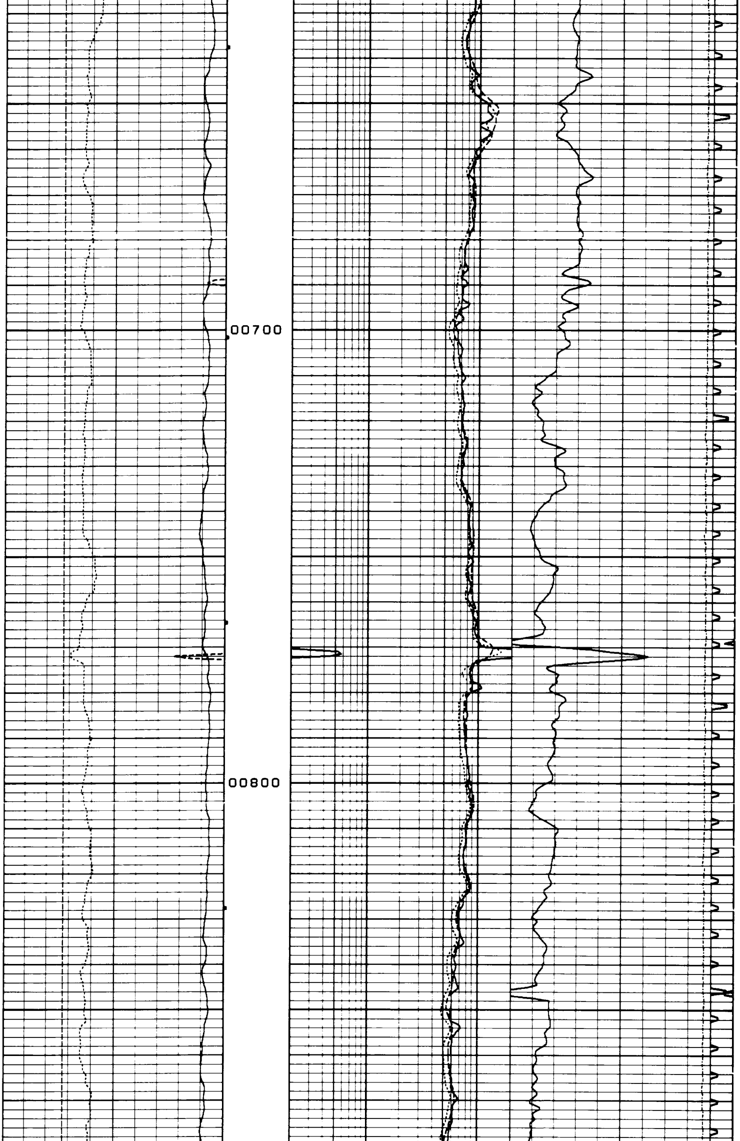
09-12-91 09:09 496.5 68249 0326-01 0 8

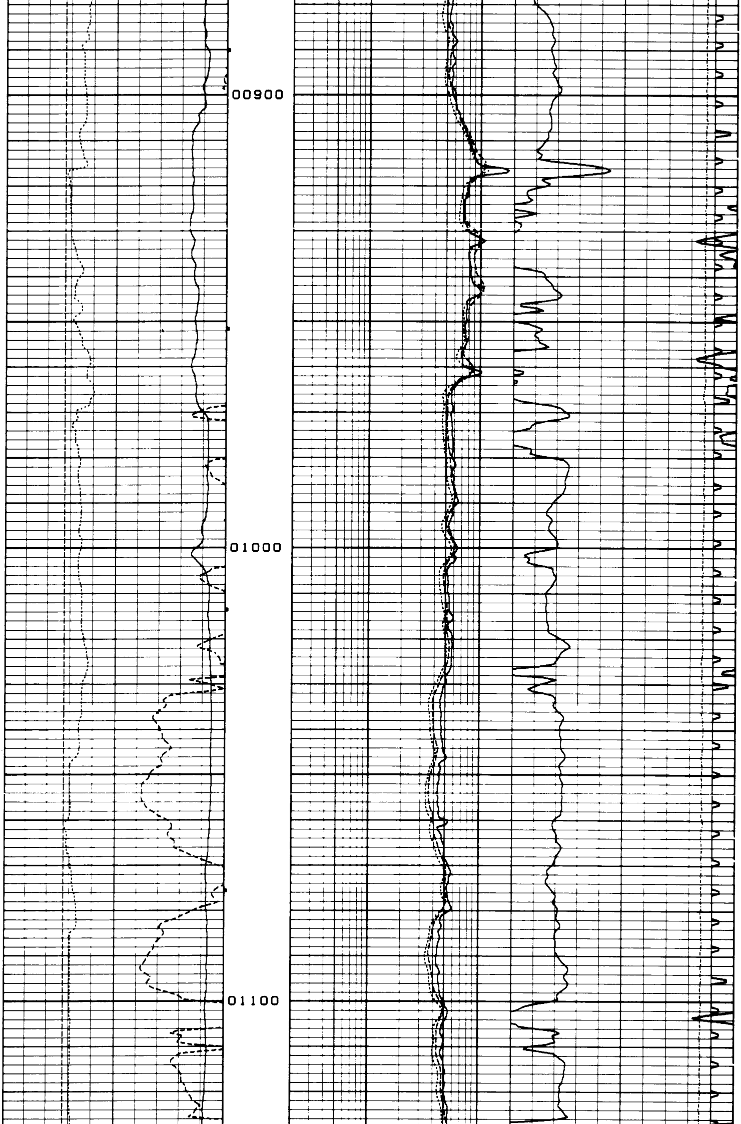
0.0 RWA-Ø BS 3.0
6 BIT (IN) 16
6 CAL-X (IN) 16
0 SP (MV) 200

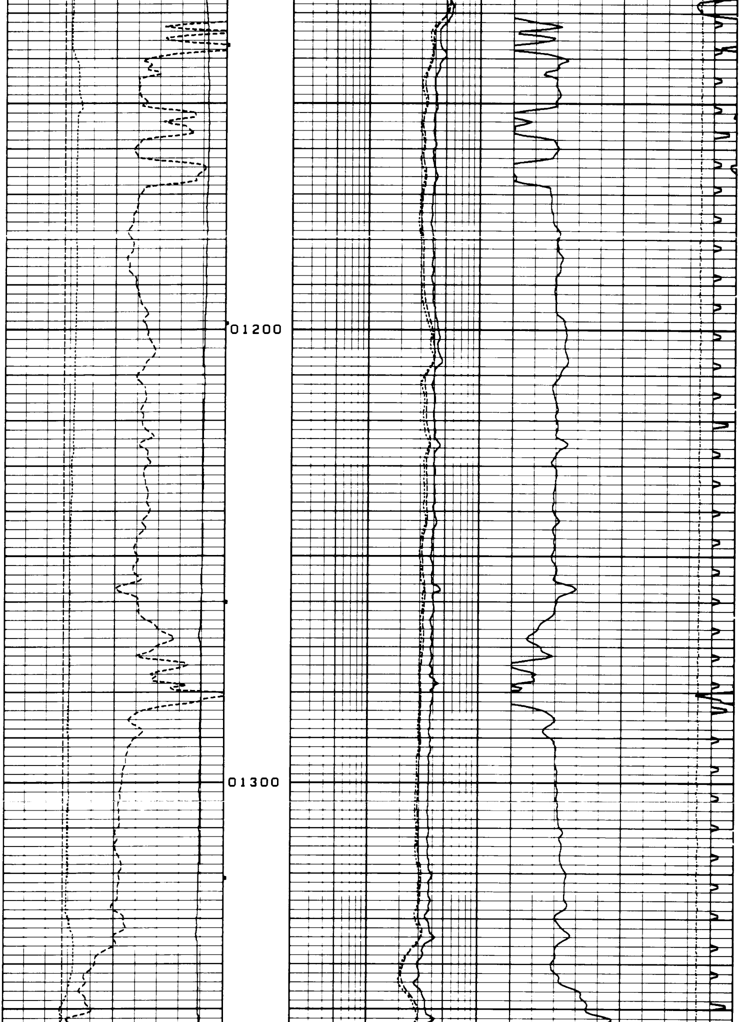
0.2 R-LL (Ω-M) 20
0.2 R-ILM(Ω-M) 20
0.2 R-ILD(Ω-M) 20

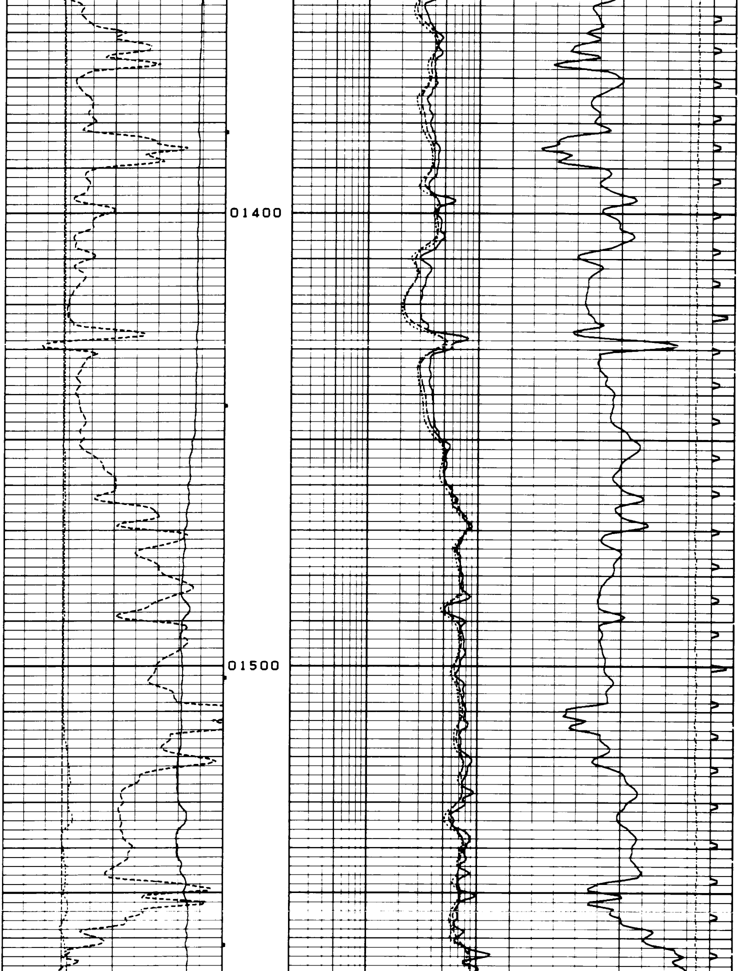
-27 3
175 BCS ΔT 75
10000 TENS(LB) 0

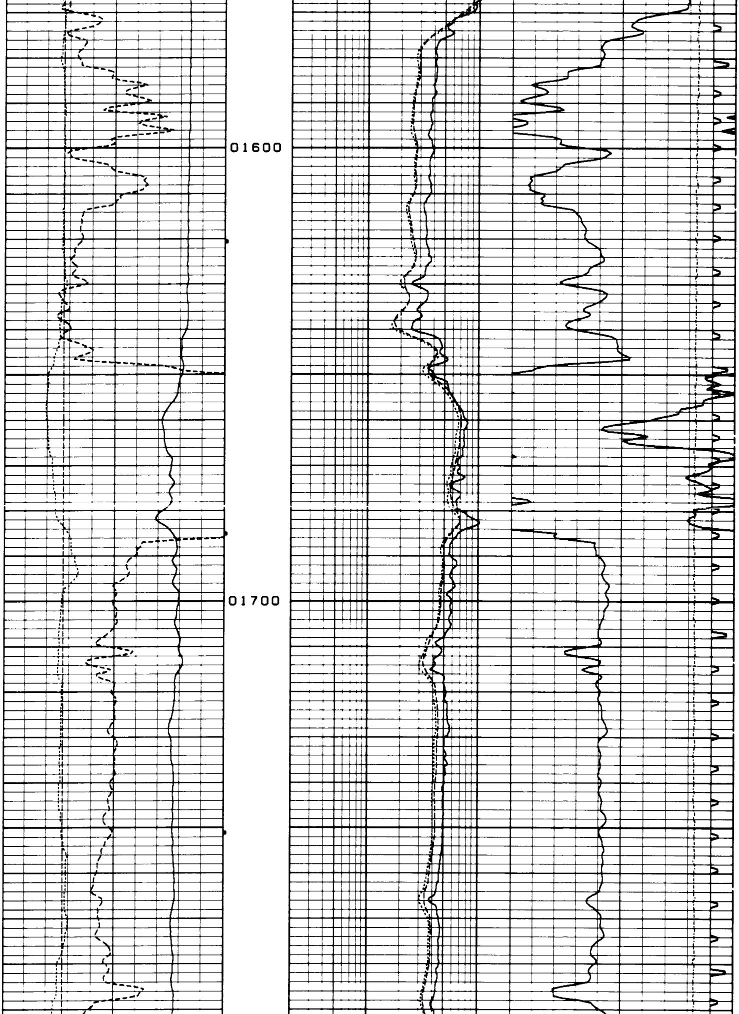


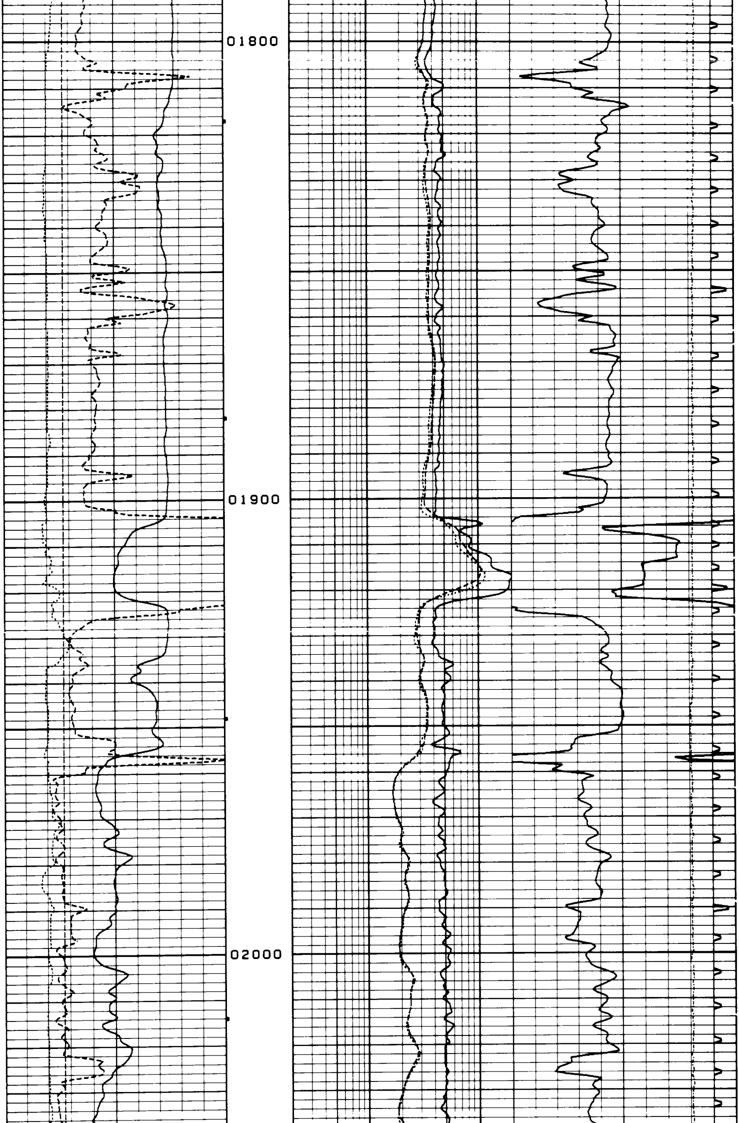


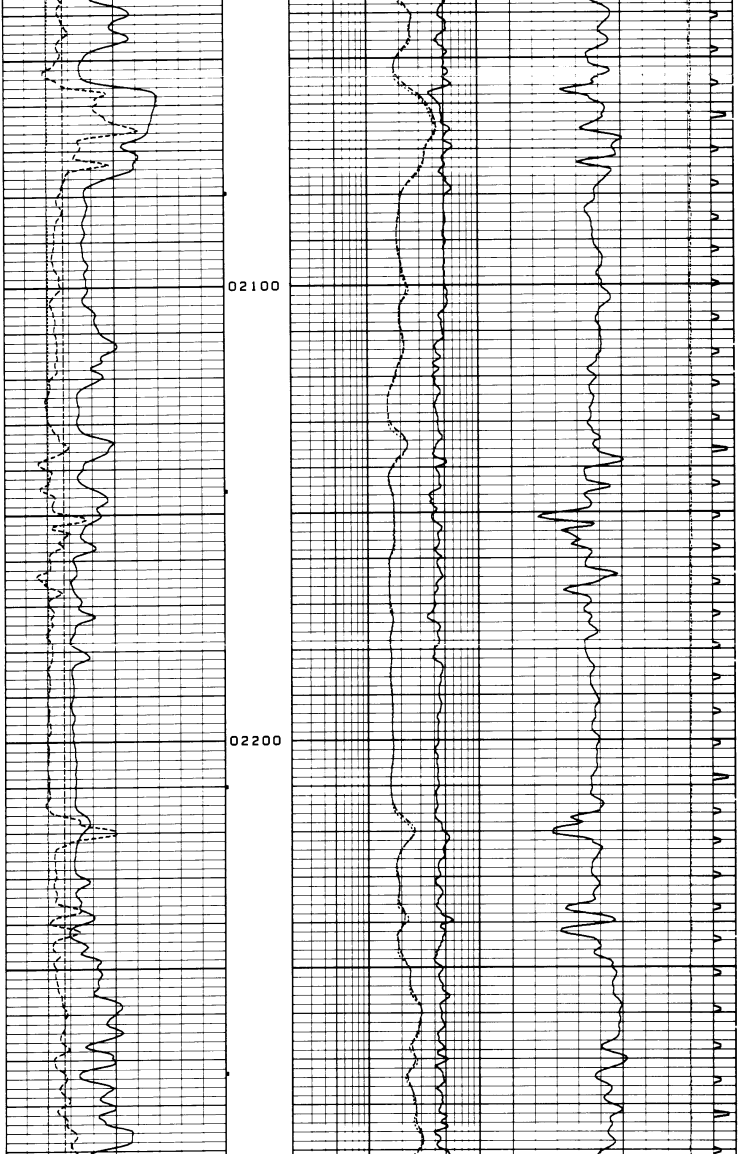


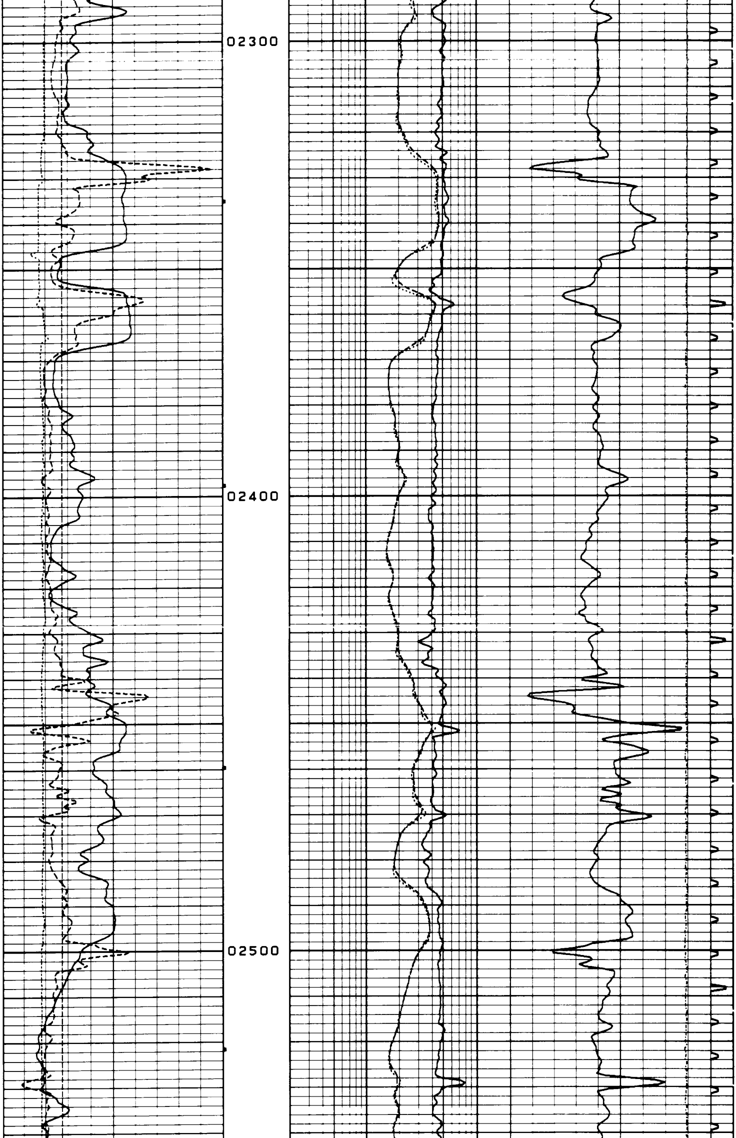


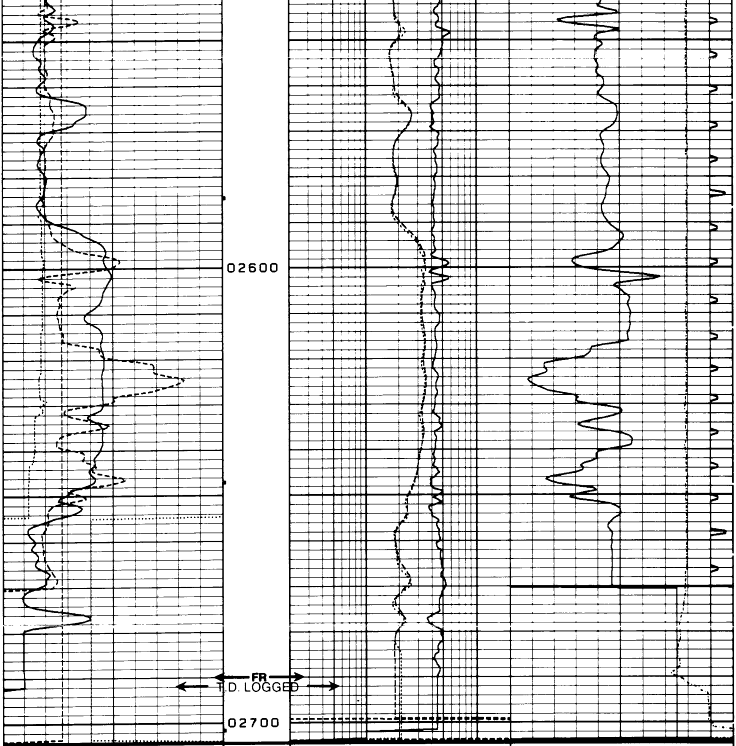












0.0 RWA-Ø BS 3.0	0.2 R-LL (Ω-M) 20	
6 BIT (IN) 16	0.2 R-ILM(Ω-M) 20	-27 3
6 CAL-X (IN) 16	0.2 R-ILD(Ω-M) 20	175 BCS ΔT 75
0 SP (MV) 200		10000 TENS(LB) 0

09-12-91 08:34 2704.0 68249 0308-99 0 8

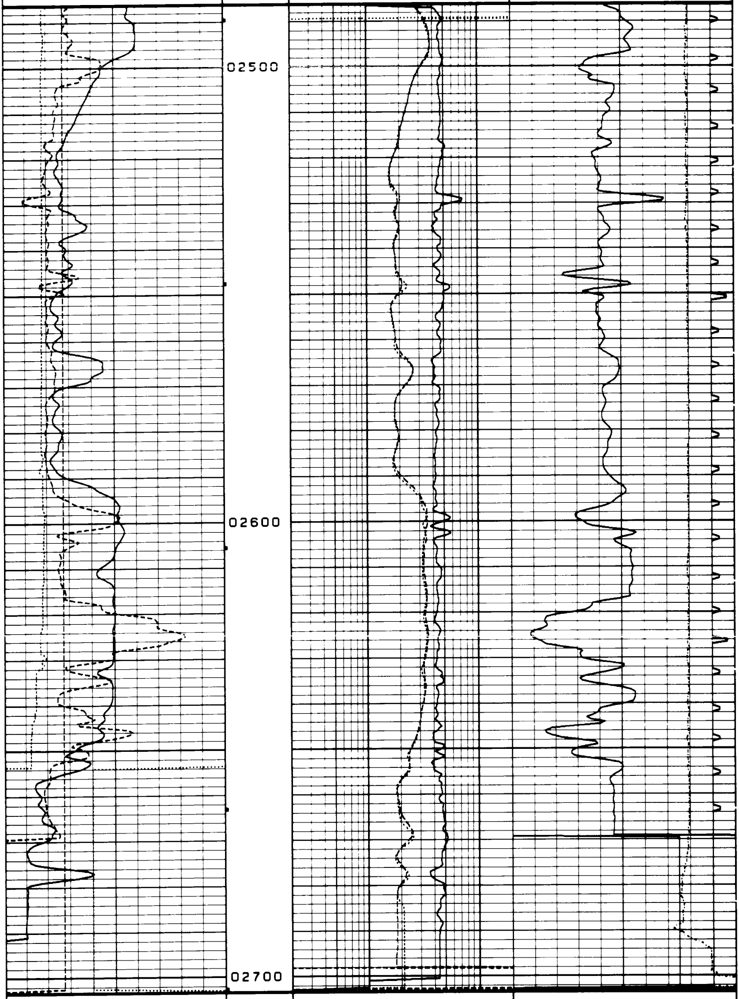
REPEAT SECTION

09-12-91 08:31 2486.0 68249 0326-01 0 7

0.0 RWA-Ø BS 3.0
6 BIT (IN) 16
6 CAL-X (IN) 16
0 SP (MV) 200

0.2 R-LL (Ω-M) 20
0.2 R-ILM(Ω-M) 20
0.2 R-ILD(Ω-M) 20

-27 3
175 BCS ΔT 75
10000 TENS(LB) 0



0.0 RWA-0 BS 3.0	0.2 R-LL (Ω-M) 20	
6 BIT (IN) 16	0.2 R-ILM(Ω-M) 20	-27 3
6 CAL-X (IN) 16	0.2 R-ILD(Ω-M) 20	175 BCS ΔT 75
0 SP (MV) 200		10000 TENS(LB) 0

09-12-91 08:27 2703.0 68249 0308-99 0 7

09-12-91 09:11 607.5 68249 0326-01 0 7

DUAL INDUCTION AFTER SURVEY CALIBRATION

TOOL TYPE: DIL-FA SERIAL NO:05512

	LOW		HIGH		
	BEFORE	AFTER	BEFORE	AFTER	UNITS
ILD	0.0	0.0	401.8	401.1	MMHO/M
ILM	0.0	-0.6	464.0	464.0	MMHO/M
LL RES	20.0	19.9	1500.0	1500.4	OHM-M
LL COND	0.267	0.266	20.0	19.9	OHM-M

ILD SONDE ERROR CORRECTION: 1.06 MMHO/M
ILM SONDE ERROR CORRECTION: -3.89 MMHO/M

09-12-91 08:23 2495.5 68249 0326-01 0 6

DUAL INDUCTION BEFORE SURVEY CALIBRATION

TOOL TYPE: DIL-FA SERIAL NO:05512

	MEASURED		CALIBRATED		
	LOW	HIGH	LOW	HIGH	UNITS
ILD	0.5	401.8	0.0	401.8	MMHO/M
ILM	5.2	463.9	0.0	464.0	MMHO/M
LL RES	20.8	1496.0	20.0	1500.0	OHM-M
LL COND	0.268	20.8	0.267	20.0	OHM-M

ILD SONDE ERROR CORRECTION: 1.06 MMHO/M
ILM SONDE ERROR CORRECTION: -3.89 MMHO/M

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09-12-91     04:59        0.0      68249    0326-01      0          2

             GAMMA RAY   BEFORE SURVEY CALIBRATION

         TOOL TYPE: UGR-HA             SERIAL  NO:03051

            BACKGROUND      CALIBRATOR    STANDARD     UNITS

               299.2          1448.6        218.0       GAPI

DELTA COUNTS PER SEC:1149.4             CPS/API  =    5.272
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09-12-91     04:56        3.0      68249    0326-01      0          1

              CALIPER BEFORE SURVEY CALIBRATION

         TOOL TYPE: XCA-CA             SERIAL  NO:09204

               MEASURED                      CALIBRATED
            SMALL    LARGE     UNITS       SMALL    LARGE     UNITS

CALX        6.84     13.86      IN         7.00     14.00      IN
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07-22-91     11:54        0.0       7674    0326-01      0          0

           DUAL  INDUCTION              SHOP CALIBRATION

         TOOL TYPE: DIL-FA             SERIAL  NO:05512

        TEST LOOP CALIBRATION          INTERNAL CALIBRATION
      MEASURED        REFERENCE       MEASURED        CALIBRATED
       LOW    HIGH    ZERO    REF      LOW   HIGH     ZERO   CAL    UNITS

ILD   -5.0   394.3    0.0    400.0    -4.0   397.5    0.0   401.8  MMHO/M
ILM    5.6   465.2    0.0    464.0     1.7   461.4    0.0   464.0  MMHO/M

ILD SONDE ERROR CORRECTION:  1.06  MMHO/M
ILM SONDE ERROR CORRECTION: -3.89  MMHO/M
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