



Tucker
ENERGY SERVICES

**BOREHOLE VOLUME
CALIPER LOG**

File No : TUL-60377
Company : CHIEFTAIN OIL CO., INC.
Well : AHS CATTLE CO. #10
Field : NA
County : BARBER
State : KANSAS
Country : USA
API No : 15-007-24255-0000

Location :
2490' FSL & 660' FEL
N/2 N/2 NE SE

LSD : **Sect** : 12 **Twp** : 35S **Rge** : 12W

Permanent Datum: GL
Drilling Measured From: KB
Elevations: KB 1392.00 Ft
Log Measured From: KB
DF 1391.00 Ft
Above Permanent Datum: 10.00 Ft
GL 1382.00 Ft
Services: CNT PIT LDT MLT

Date	01-04-2015		
Run Number	1		
Depth--Driller	5467.0	Ft	
Depth--Logger	5476.0	Ft	
First Reading	5453.0	Ft	
Last Reading	936.0	Ft	
Casing--Driller	936.0	Ft	
Casing--Logger	936.0	Ft	
Bit Size	7.875	In	
Casing Size	8.625	In	
Hole Fluid Type	CHEM-GEL		
Density	9.4		
Fluid Loss	9.6		
PH/Viscosity	9.5	53.0	
Sample Source	MEASURED		
RM@Measured Temp.	2.000	@ 50 F	
RMF@Measured Temp	1.600	@ 50 F	
RMC@Measured Temp.	2.400	@ 50 F	
Source RMF/RMC	CALCULATED	CALCULATED	
RM@BHT	0.820	@ 132 F	
Time Circulation Stopped	01-04-2015 10:00 pm		
Max Recorded Temp.	132	F	
Equipment/Base	127	TULSA	
Recorded By	SHELDON TYELR		
Witnessed By	DAVID BARKER		

The customer is hereby warned that by providing the log data herein, T. E. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. E. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. E. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. E. S. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	5467.00	8.625	32.00	936.00	0.00

Run Number	1	
Date	01-04-2015	
Date/Time On Bottom	01-05-2015 1:00 am	
Depth to Fluid	0.0 Ft	
Salinity	3400.000	
RMF@BHT	0.660 @ 132 F	
RMC@BHT	0.980 @ 132 F	

Run Number 1

Comments

ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING
 PHIN IS CALIPER CORRECTED

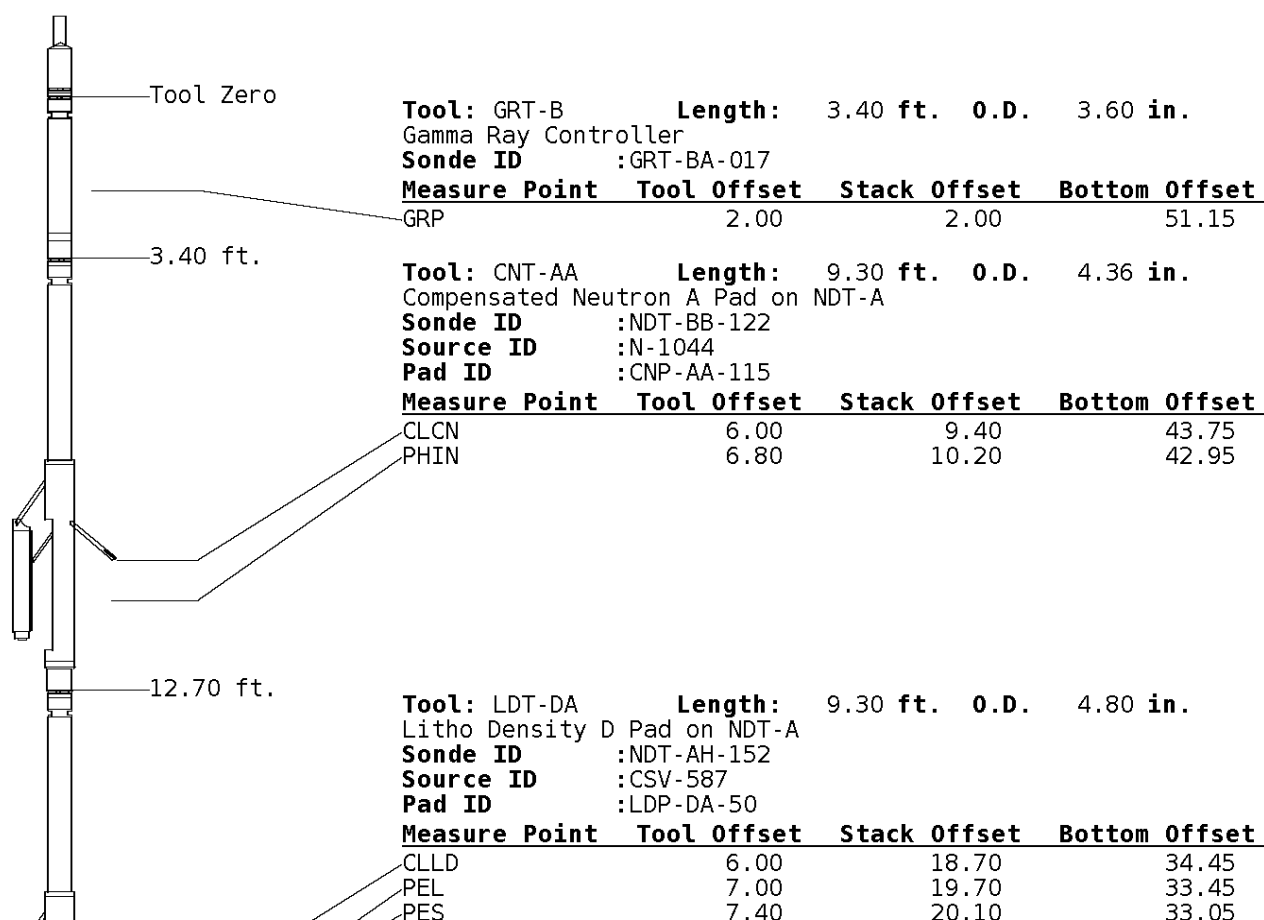
CUSTOMER REQUESTED DETAIL PULLED TO 3700'
 PULLED TIGHT AT 5270' CLOSED CALIPERS REOPENED AT 5200'

NO REPEAT DUE TO BAD HOLE CONDITIONS
 DRAGGING MUD BALL FROM 5200' TO 5050'
 GRT: GRP, GRX
 CNT: PHIN, CLCNIN, PHXN
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX
 MLT: NOR_RF, INV_RF, MSCLPIN
 PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS:+4
 J.JOHNSON
 C.GONZALES

Tool String Schematic

Total Tool Length - 53.15 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.



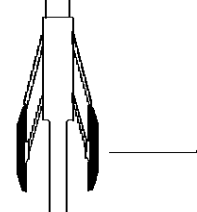


LDEN	7.20	19.90	33.25
LCOR	7.20	19.90	33.25

22.00 ft.

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
 Micro Spherically Focused (IC)
Sonde ID :MLT-DA-21

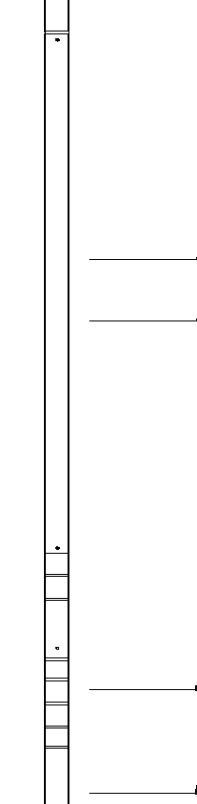
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	23.55
MSCLP	7.60	29.60	23.55
INV	7.60	29.60	23.55
NOR	7.60	29.60	23.55



31.66 ft.

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-062

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	40.58	12.56
ILM	10.10	41.76	11.39
SFLU	17.49	49.15	4.00
SP	20.60	52.26	0.88



LWT 53.15 ft.

Well File: CHIEFTAIN_AHS_CATTLE_CO_10_JAN4_MSTK

Scale: 1:240 **Format:** CAL-240

Segment: V1.D1.S3 AS FINAL MAIN

Acquired: 2015-01/05 01:09 3.4.0-13284

Reference: 0

Processed: 2015-01/05 03:01 3.4.0-13284

**BIT SIZE
INCHES (IN)**

6 16

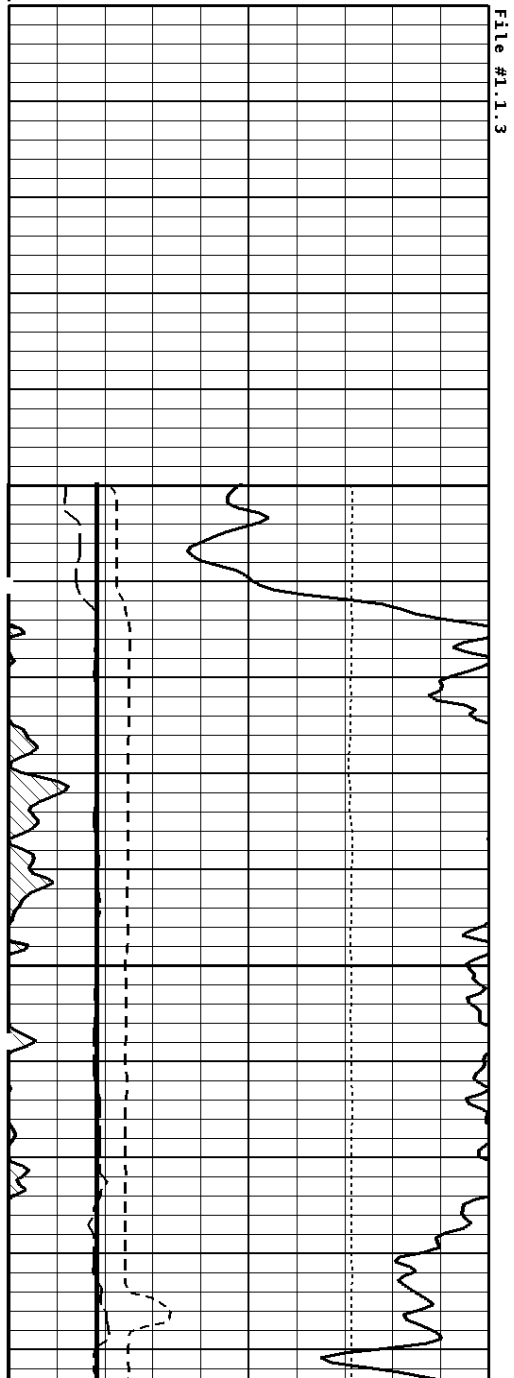
**Y CALIPER
INCHES (IN)**

16 26

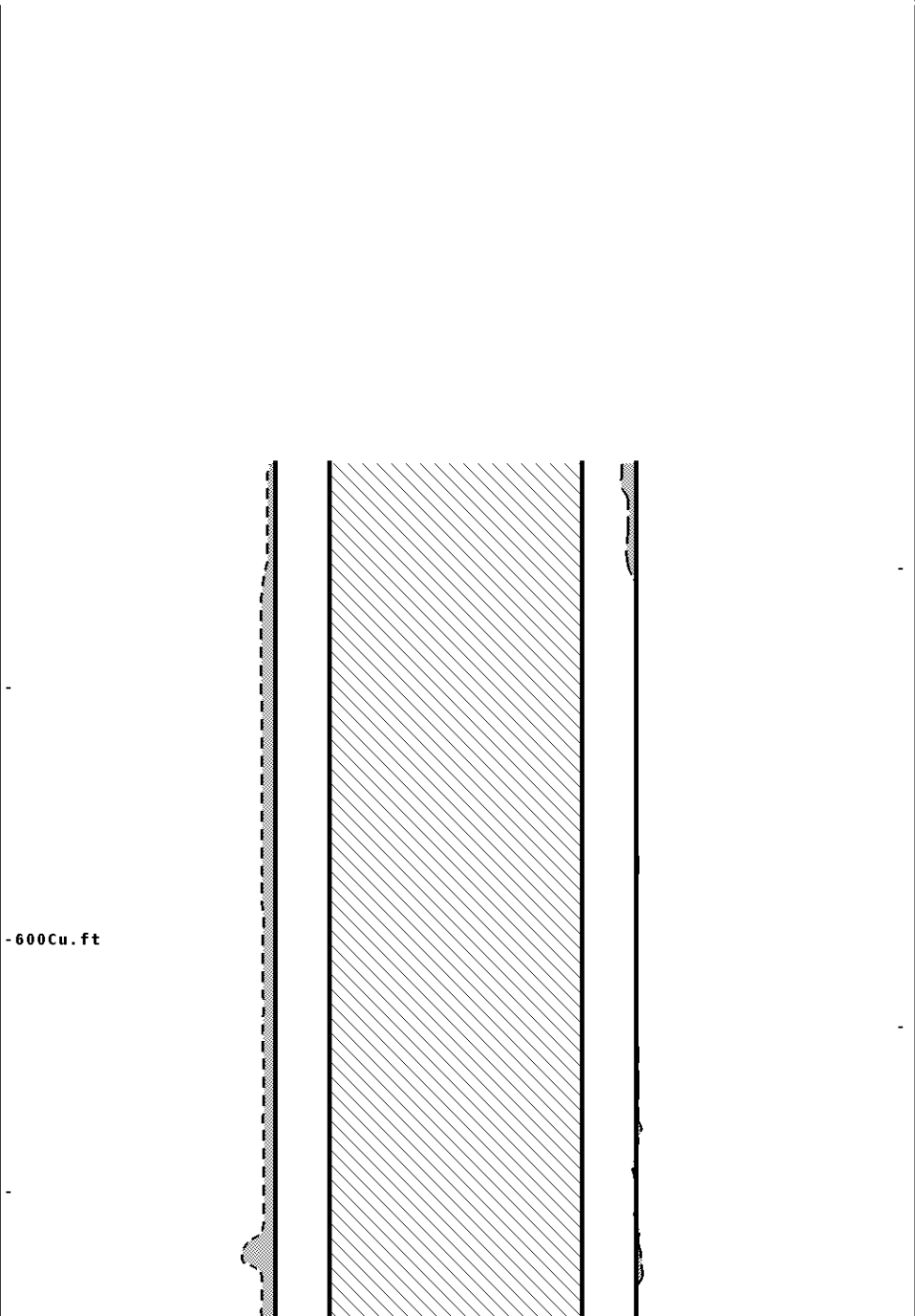
16	26
6	16
X CALIPER INCHES (IN)	
16	26
6	16
TENSION LBS	
10000	0
GAMMA RAY API UNITS	
150	300
0	150

BOREHOLE VOLUME CU.FT	ANNULAR HOLE VOLUME CU.FT.
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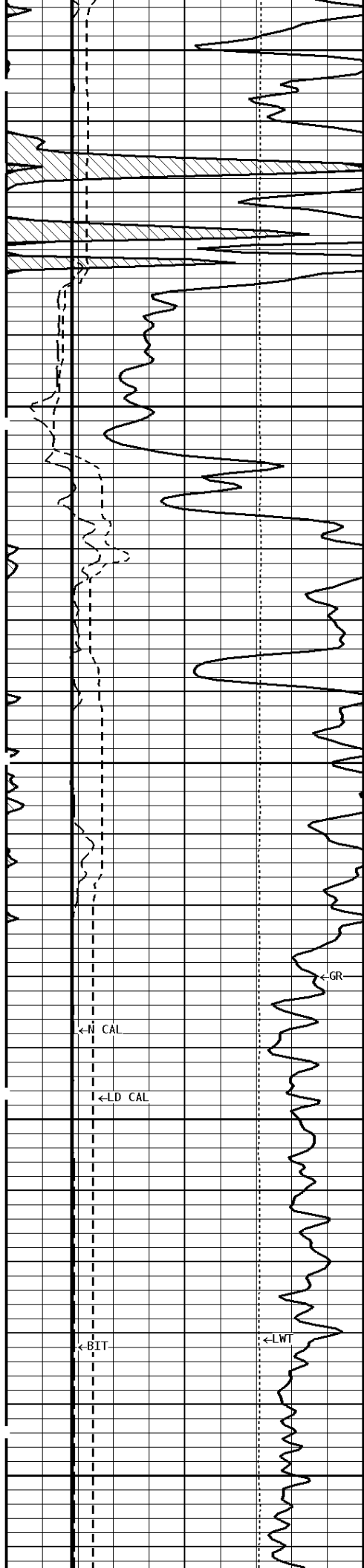
1:240 MAIN SECTION



3700



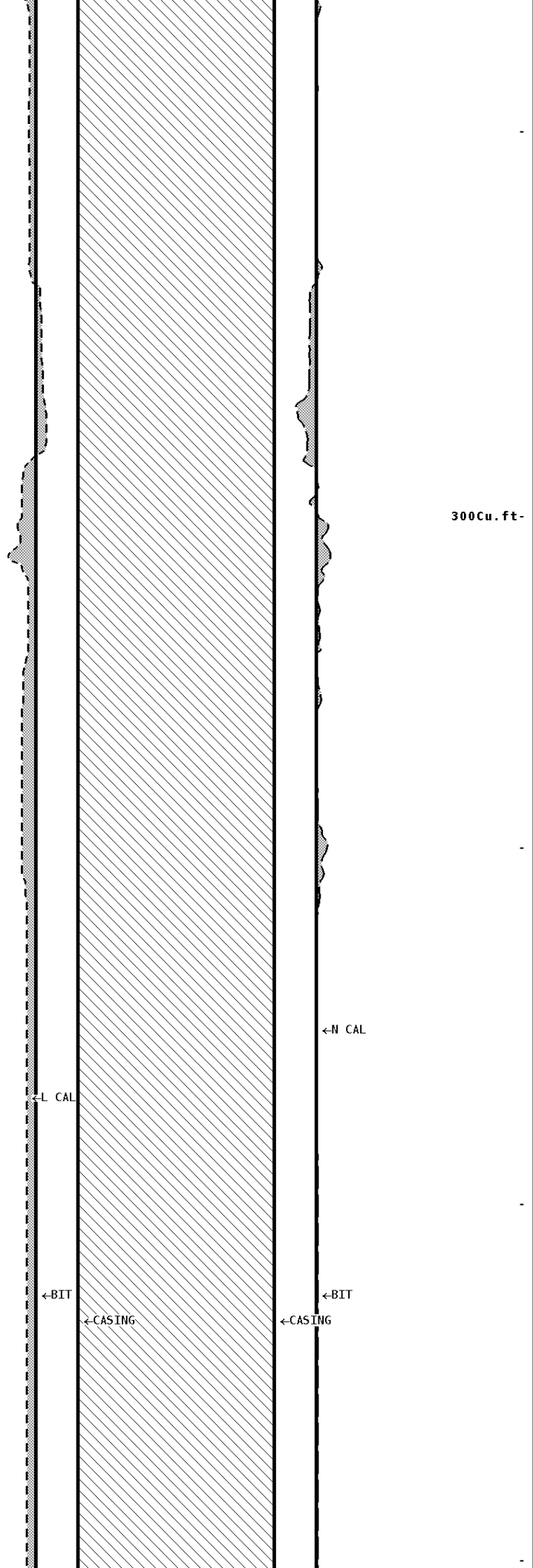
-600Cu.ft



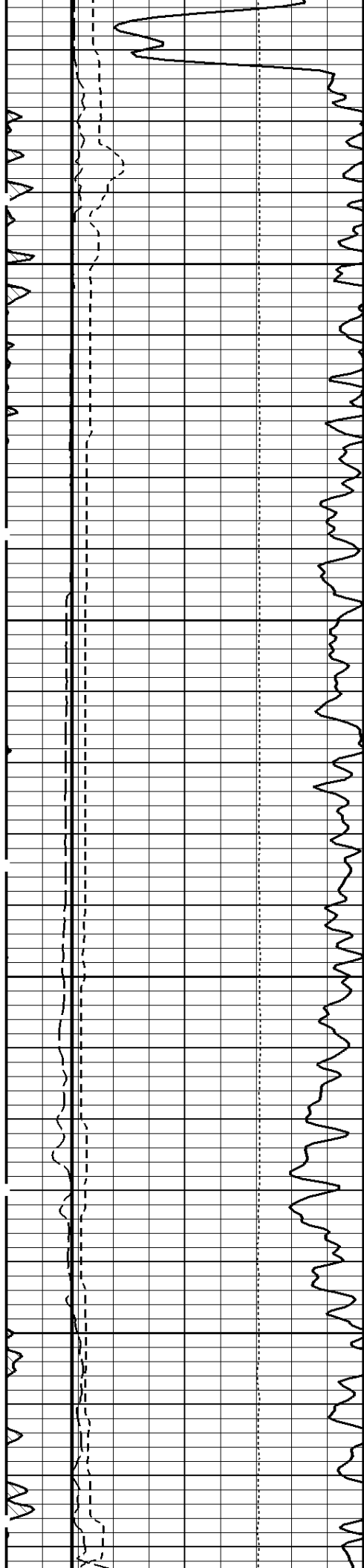
3800

3900

4000



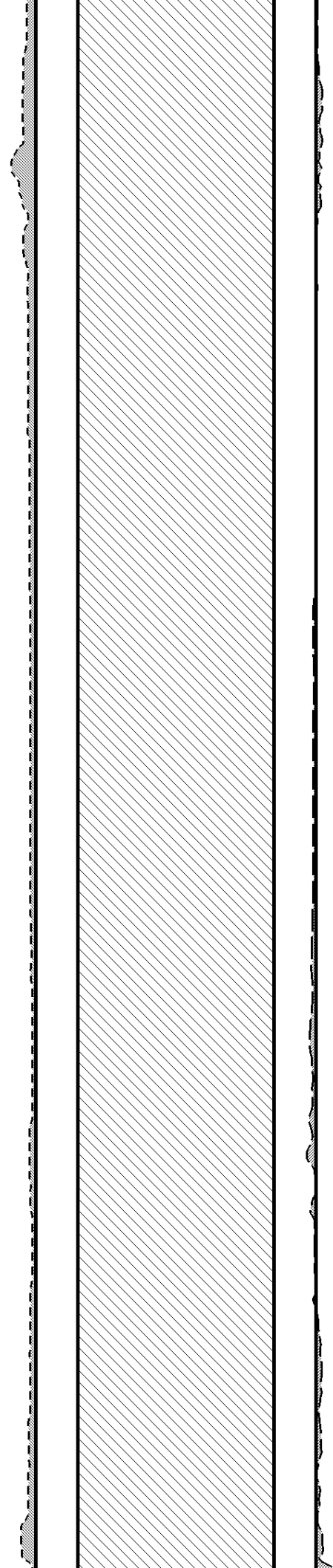
300Cu.ft-

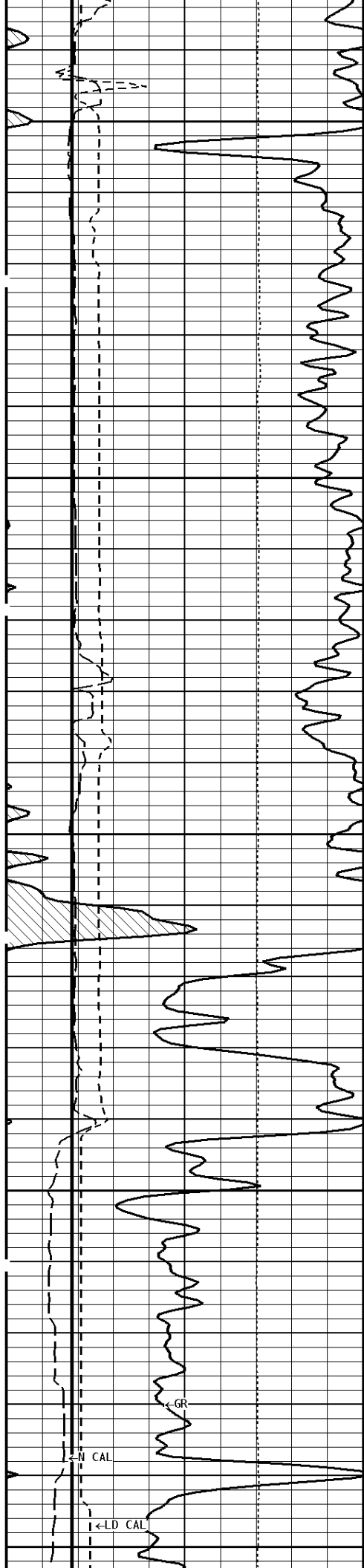


-500Cu.ft

4100

4200





4300

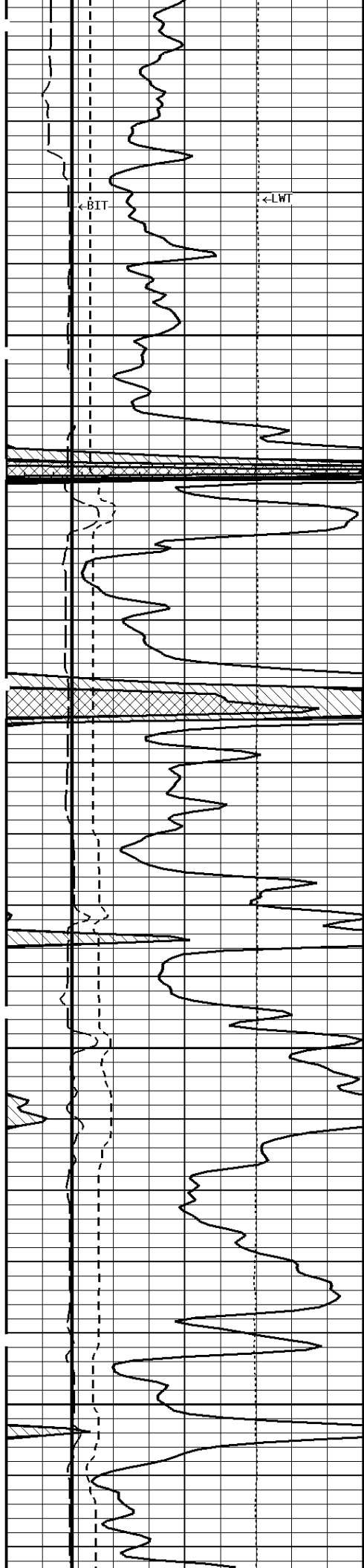
-400Cu.ft

4400

200Cu.ft-

←L CAL

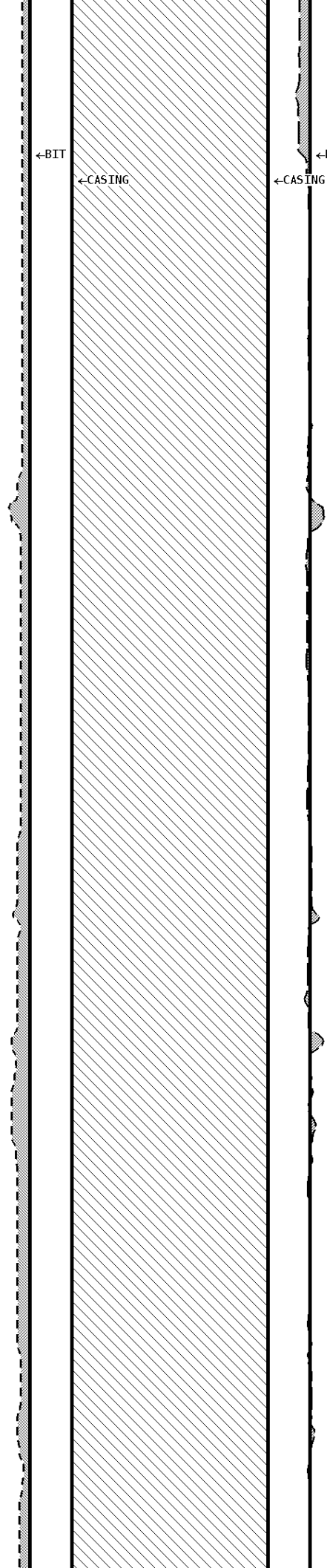
←N CAL

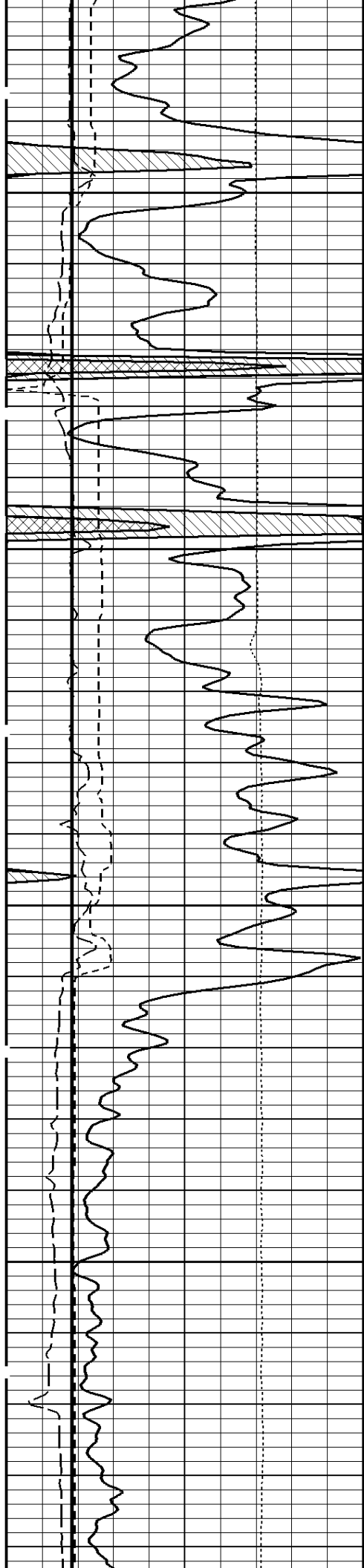


4500

-300Cu.ft

4600



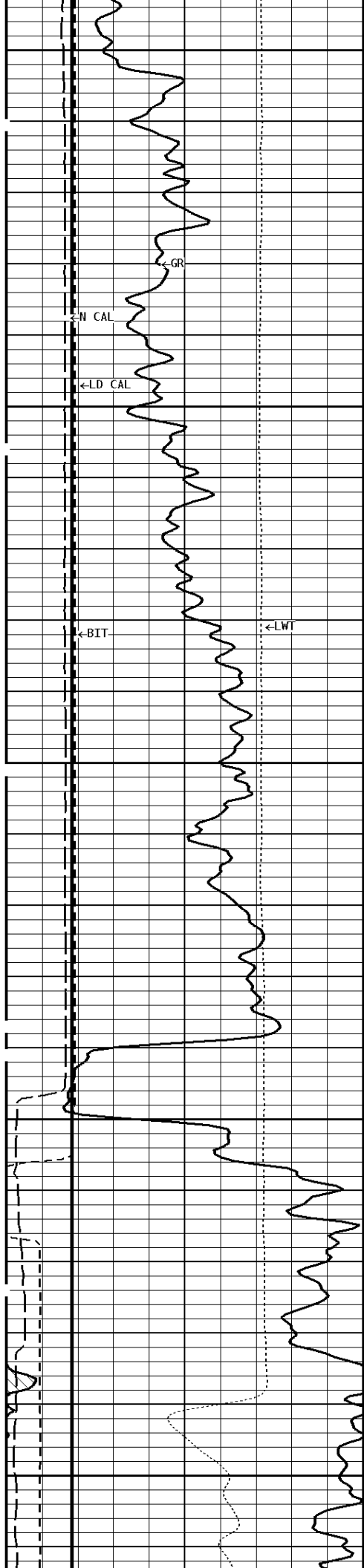


4700

4800

-200Cu.ft

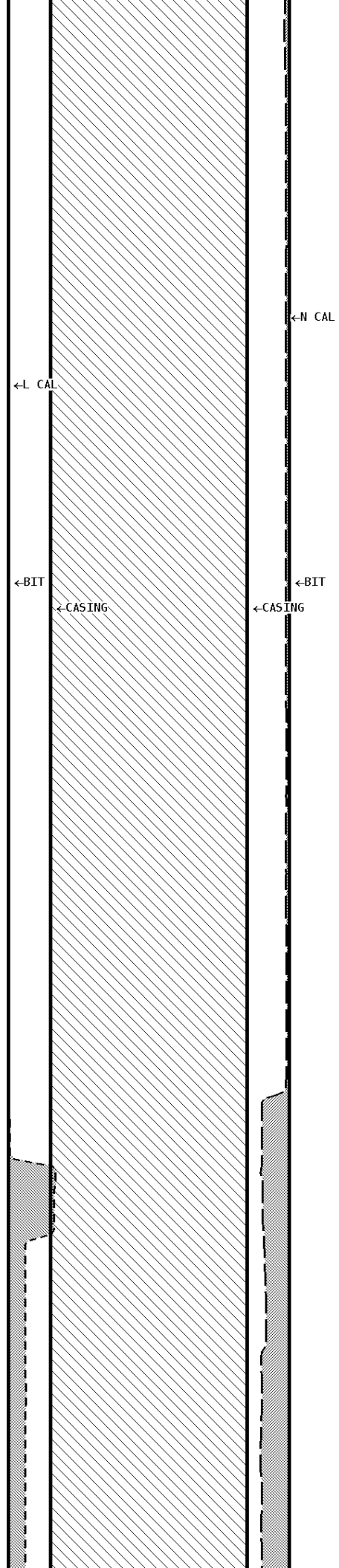
100Cu.ft-



4900

5000

5100



←N CAL

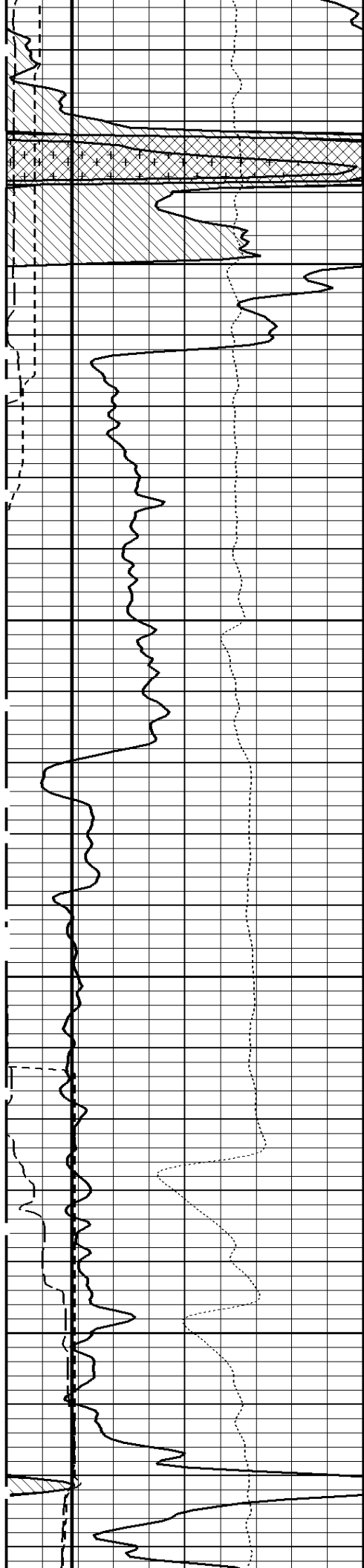
←L CAL

←BIT

←CASING

←BIT

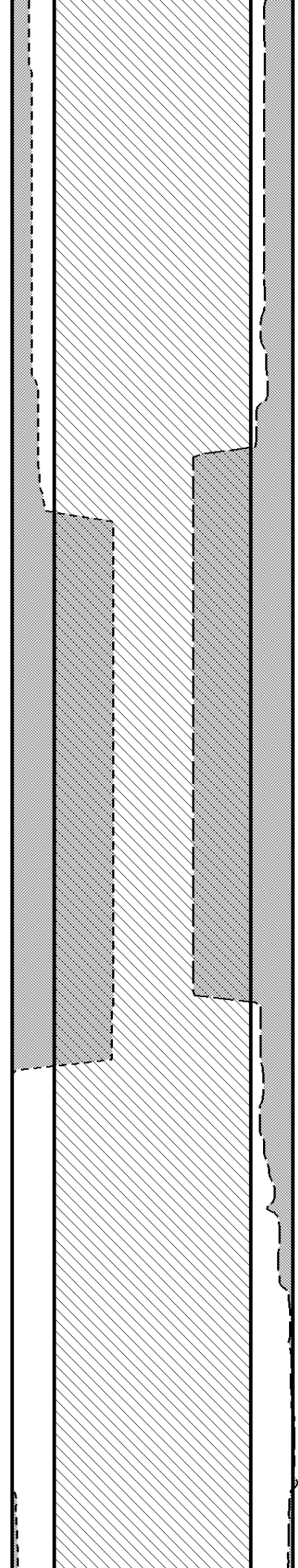
←CASING

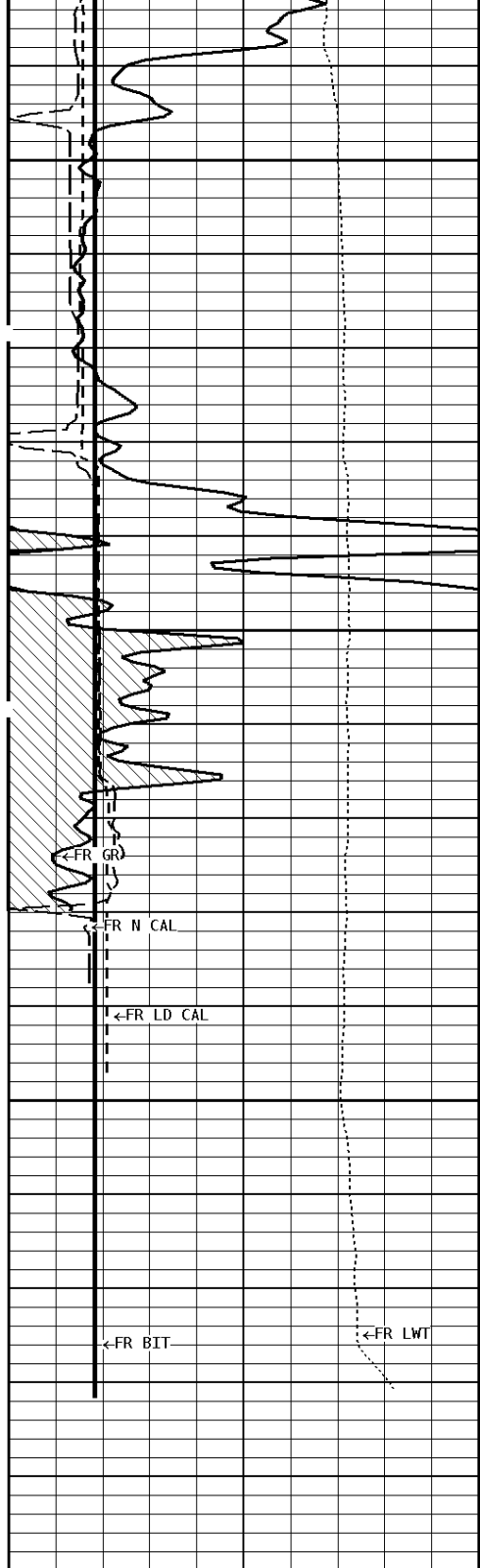


5200

5300

-100Cu.ft



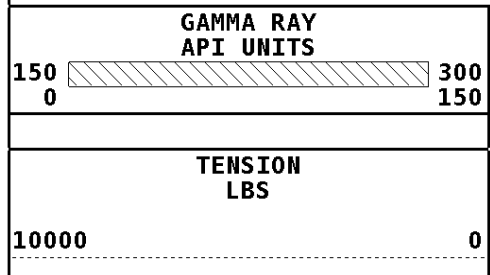
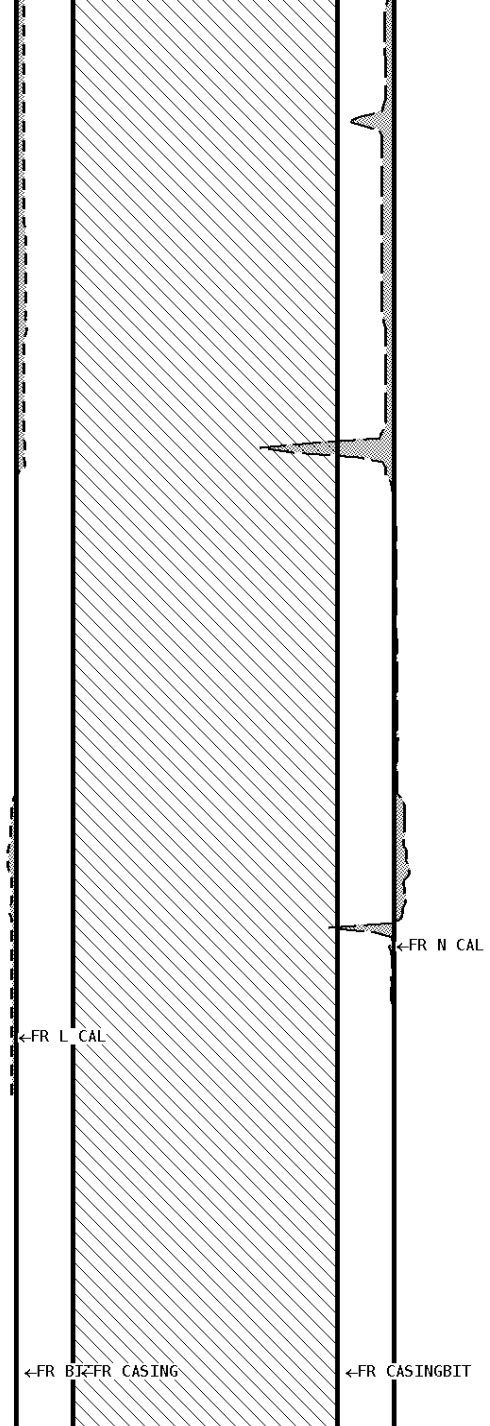


5400

5476

File #1.1.3

1:240 MAIN SECTION



BOREHOLE VOLUME
CU.FT

ANNULAR HOLE VOLUME
CU.FT.

**X CALIPER
INCHES (IN)**

16 26
6 16

**Y CALIPER
INCHES (IN)**

16 26
6 16

**BIT SIZE
INCHES (IN)**

6 16

*** Borehole Zone Factors ***

Zone 1 99999.0 to 0.0 Feet

Drill Bit Size 7.875 in
Casing Diameter 5.500 in

*** Calibration Summary ***

**Shop Calibration
GRT-B**

Performed : 02-Jan-2015 Time : 13:01
Sensor Suite : GR-GR5 ID : GRT-BA-017

	Measured	Units	Calibrated	Units
GR	Background Jig		Jig	
	61 378	CPS	175	GRAPI

**Shop Calibration
CNT-AA**

Performed : 02-Jan-2015 Time : 13:12
Sensor Suite : CALI-BCN ID : NDT-BB-122

	Jig - Measured	Jig - Calibrated	Units
	Ring#1 Ring#2	Ring#1 Ring#2	
CL # 1	9.0 13.7	6.0 12.0	IN.

**Shop Calibration
LDT-DA**

Performed : 02-Jan-2015 Time : 13:18
Sensor Suite : CALI-LTH ID : NDT-AH-152

	Jig - Measured	Jig - Calibrated	Units
	Ring#1 Ring#2	Ring#1 Ring#2	
CL # 1	8.5 11.9	6.0 12.0	IN.



Tucker
ENERGY SERVICES

Company: CHIEFTAIN OIL CO., INC.

Well: AHS CATTLE CO. #10

Location: 2490' FSL & 660' FEL

Logged: 01-04-2015

K.B. Elev: 1392.0 Ft