



Tucker
ENERGY SERVICES

**BOREHOLE VOLUME
CALIPER LOG**

Company	CHIEFTAIN OIL CO. INC.
Well	AHS CATTLE CO. #11
Field	STRANAHAN
County	BARBER
State	KANSAS
Country	USA
API No.	15-007-24254
File No	TUL-60426
Company	CHIEFTAIN OIL CO. INC.
Well	AHS CATTLE CO. #11
Field	STRANAHAN
County	BARBER
State	KANSAS
Country	USA
API No	15-007-24254
Location	1200' FNL & 660; FEL S2 S2 NE NE
LSD	
Sect	12
Twp	35S
Rge	12W

Permanent Datum:	GL	Elevations:		Services:	
Drilling Measured From:	KB	KB 1400.00	Ft	CNT	PIT
Log Measured From:	KB	DF 1399.00	Ft	LDT	
Above Permanent Datum:	10.00 Ft	GL 1390.00	Ft	MLT	
Date	12-22-2014				
Run Number	1				
Depth--Driller	5457.0	Ft			
Depth--Logger	5452.0	Ft			
First Reading	5439.0	Ft			
Last Reading	3700.0	Ft			
Casing--Driller	313.0	Ft			
Casing--Logger	320.0	Ft			
Bit Size	7.875	In			
Casing Size	8.625	In			
Hole Fluid Type	WBM				
Density	9.4				
Fluid Loss	8.8				
PH/Viscosity	9.0	48.0			
Sample Source	MEASURED				
RM@Measured Temp.	1.000 @ 50 F				
RMF@Measured Temp	0.850 @ 50 F				
RMG@Measured Temp.	1.150 @ 50 F				
Source RMF/RMC	CALCULATED/CALCULATED				
RM@BHT	0.420 @ 128 F				
Time Circulation Stopped					
Max Recorded Temp.	130	F			
Equipment/Base	T-126	TULSA			
Recorded By	S.K. DAVIS				
Witnessed By	D. 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	5452.00	8.625	20.00	320.00	0.00

Run Number	1	
Date	12-22-2014	
Date/Time On Bottom	12-22-2014 11:30 pm	
Depth to Fluid	0.0 Ft	
Salinity	3500.000	
RMF@BHT	0.360 @ 128 F	
RMC@BHT	0.480 @ 128 F	

Run Number 1

Comments

ALL PRESENTATION PER CUSTOMER REQUEST
 GRT,CNT,LDT,PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR & BOREHOLE VOLUME CALCULATED USING 5.5 PRODUCTION CASING
 PHIN IS CALIPER CORRECTED
 DETAIL IS PRESENTED FROM TD TO 3700'
 SALT / ANHYDRITE SECTION FROM 1750' TO 1200'

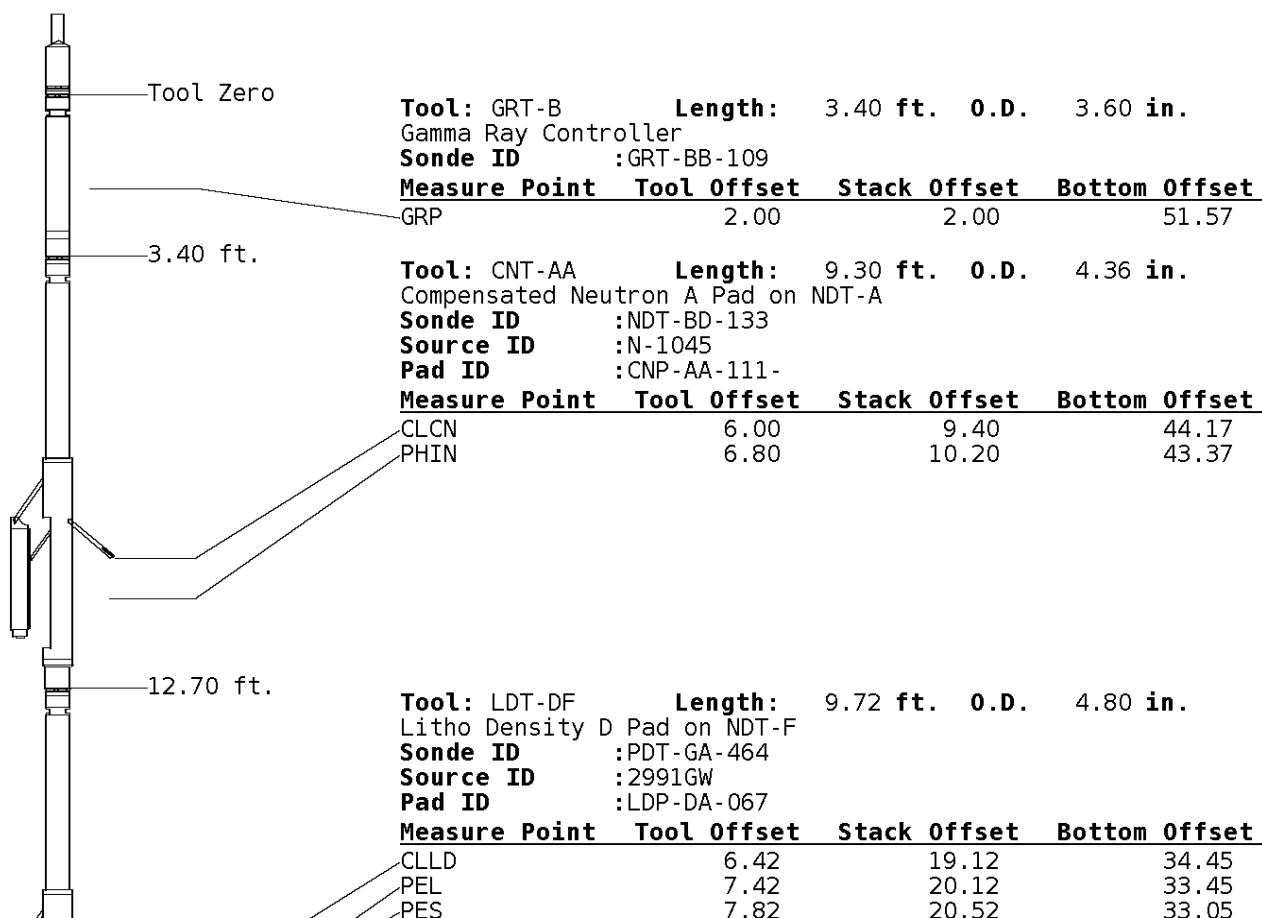
GRT; GRP,
 CNT; PHIN, CLCNIN
 LDT; PORL, LCORN, PECLN, LDENN, CLLDIN
 MLT; NOR.RF, INV.RF, MSCLPIN.
 PIT; ILD, ILM, SPU, SFLAEC, CIRD

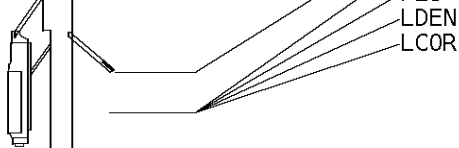
OPERATORS;

C. GONZALES
 J. OFFIENGBU

Tool String Schematic

Total Tool Length - 53.57 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.



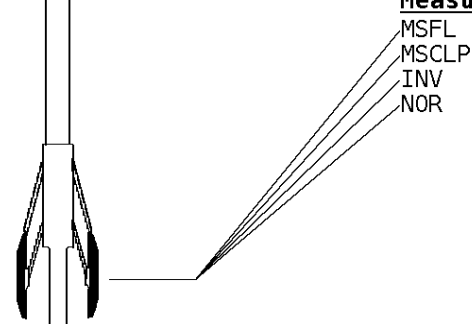


7.62	20.32	33.25
7.62	20.32	33.25

22.42 ft.

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
 Micro Spherically Focused (IC)
Sonde ID :MST-DA-057

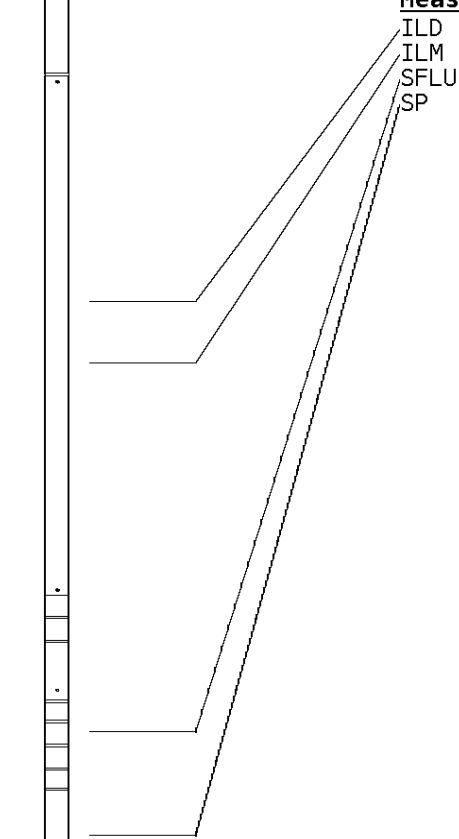
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	30.02	23.55
MSCLP	7.60	30.02	23.55
INV	7.60	30.02	23.55
NOR	7.60	30.02	23.55



32.08 ft.

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-075

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	41.00	12.56
ILM	10.10	42.18	11.39
SFLU	17.49	49.57	4.00
SP	20.60	52.68	0.88



LWT 53.57 ft.

Well File: chief-ahs-11-mstk-dec-22

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

Segment: V1.D1.S5 MN

Acquired: 2014-12/22 23:38 3.4.0-13284

Reference: 0

Processed: 2014-12/23 01:25 3.4.0-13284

**BIT SIZE
INCHES (IN)**

6 16

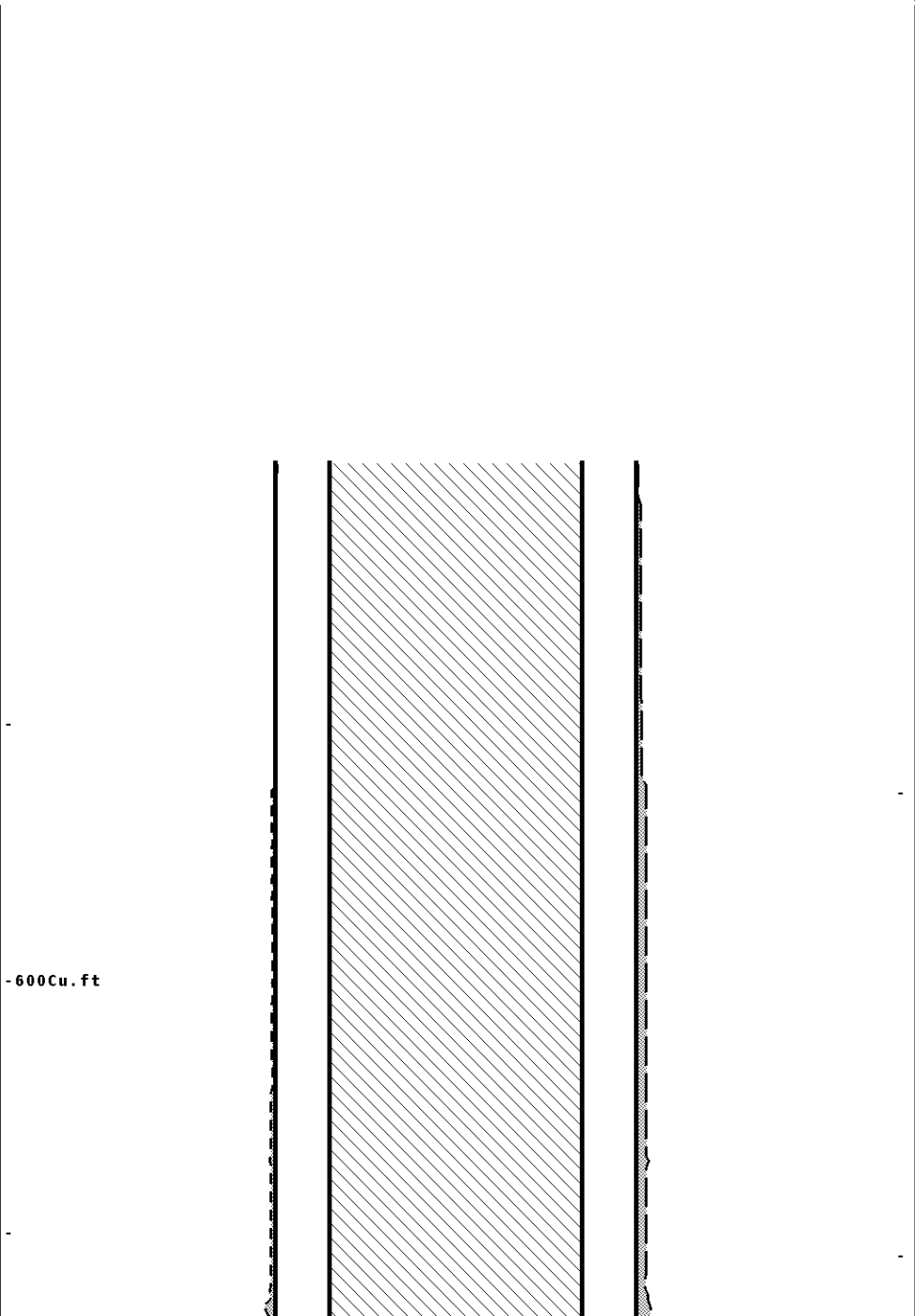
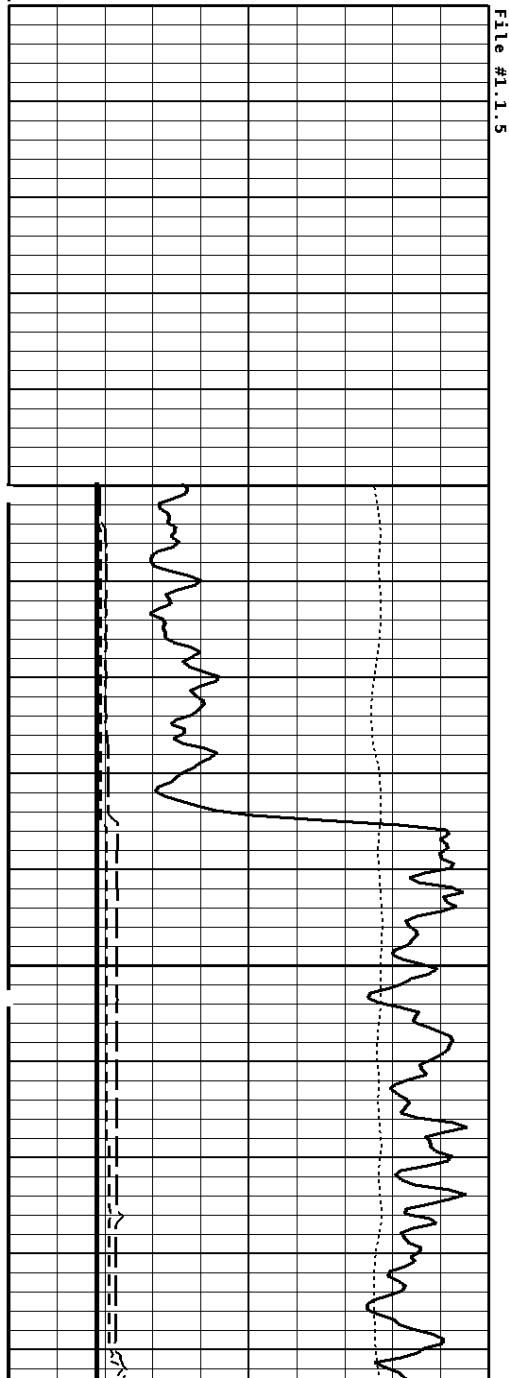
**Y CALIPER
INCHES (IN)**

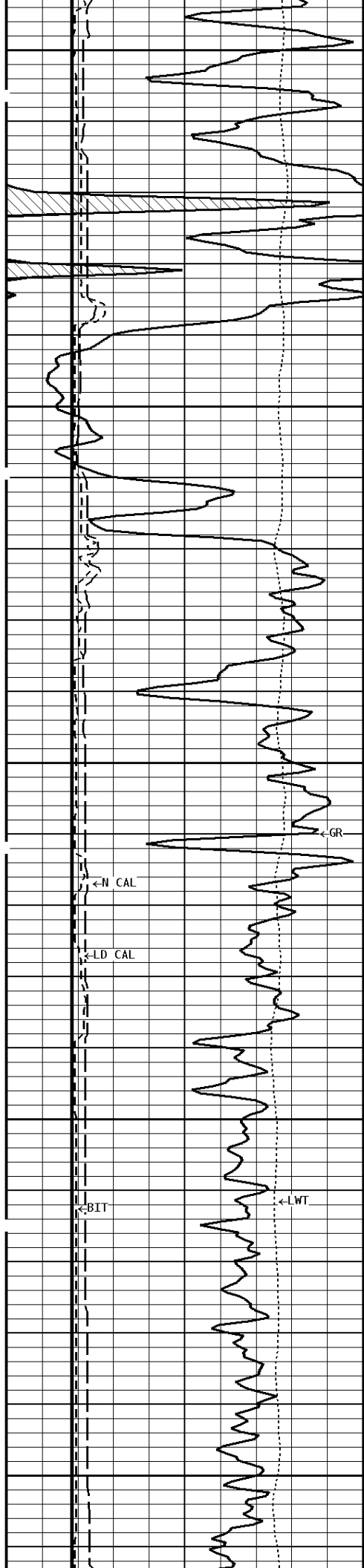
16 26

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

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





3800

3900

4000

←GR

←N CAL

←LD CAL

←BIT

←LWT

300Cu.ft-

←N CAL

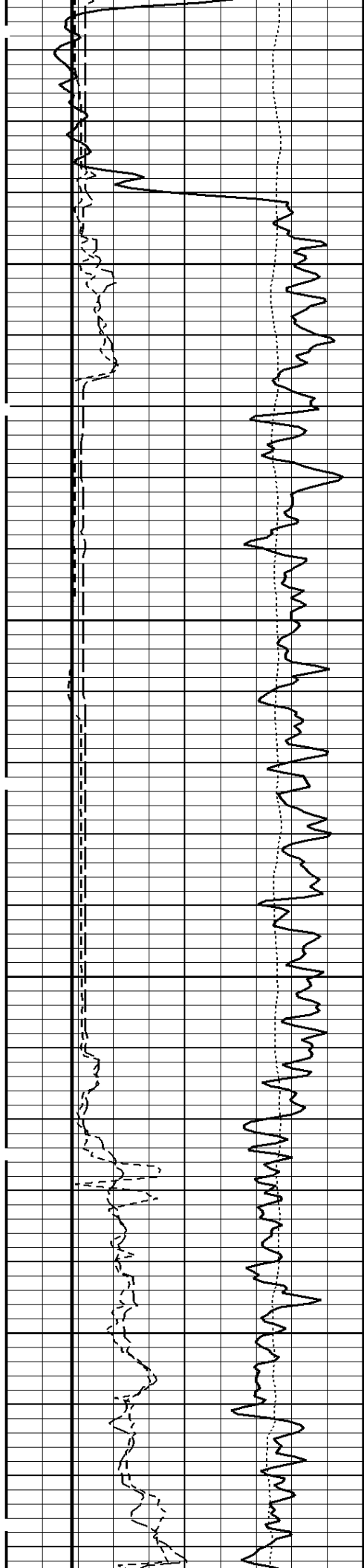
←L CAL

←BIT

←CASING

←BIT

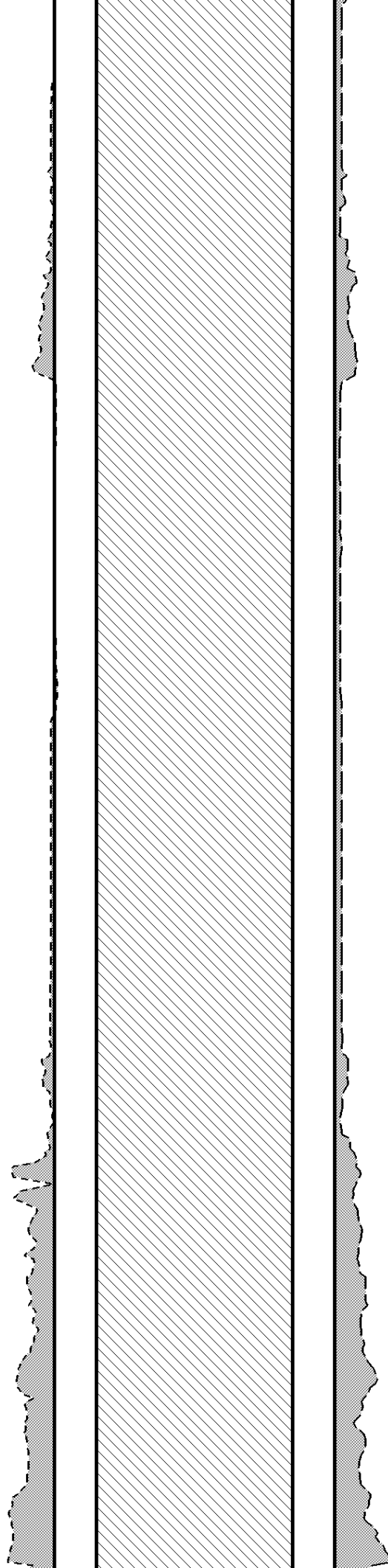
←CASING

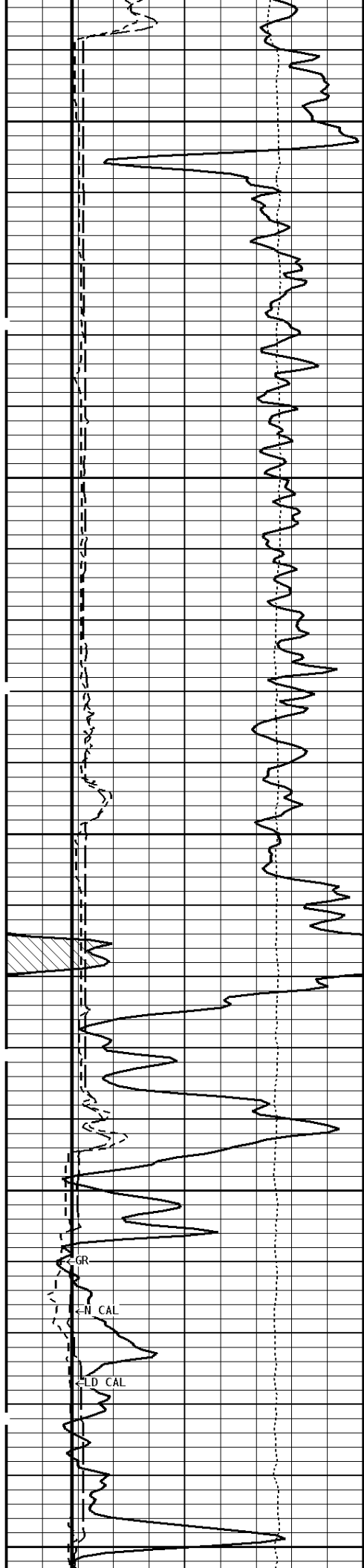


-500Cu.ft

4100

4200





4300

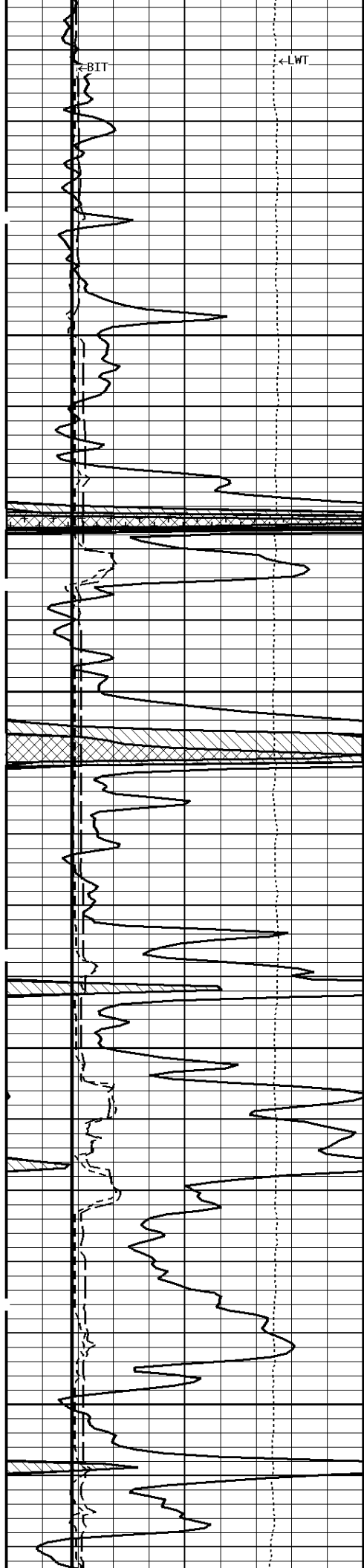
4400

-400Cu.ft

200Cu.ft-

←L CAL

←N CAL



4500

-300Cu.ft

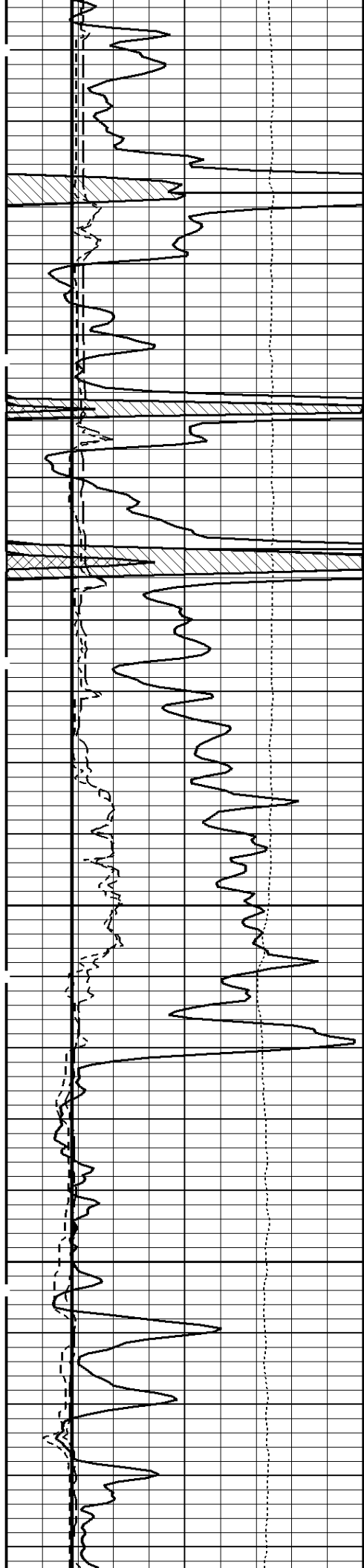
4600

←BIT

←CASING

←BIT

←CASING

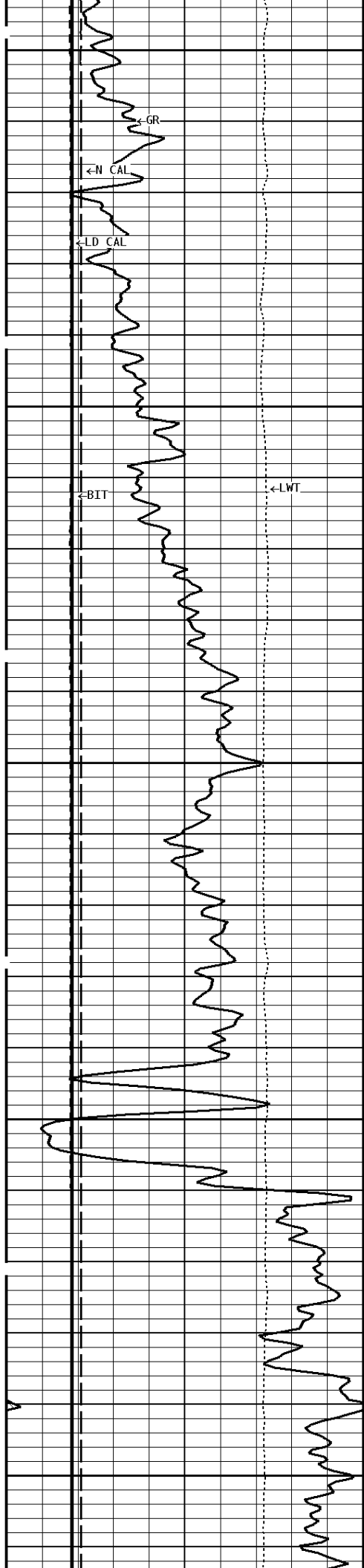


4700

4800

-200Cu.ft

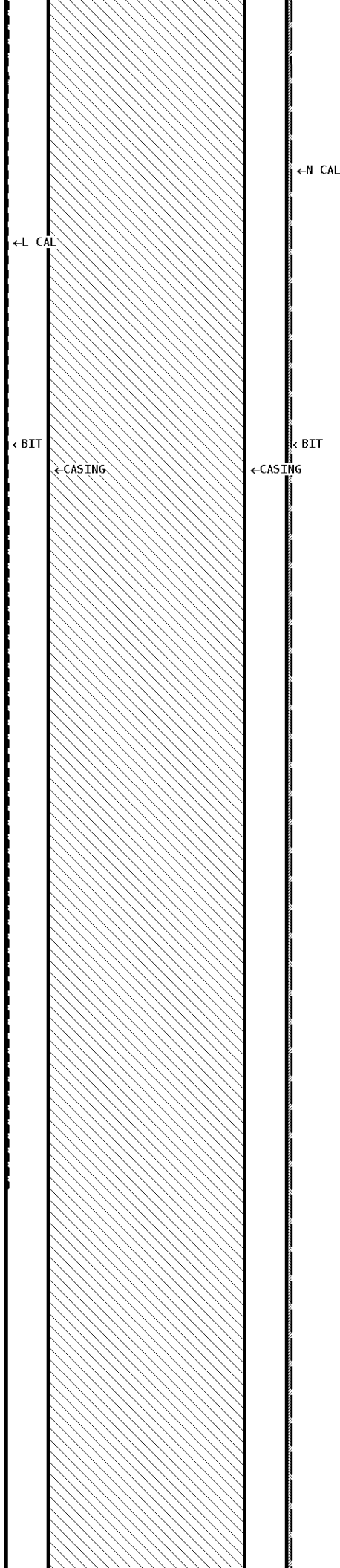
100Cu.ft-

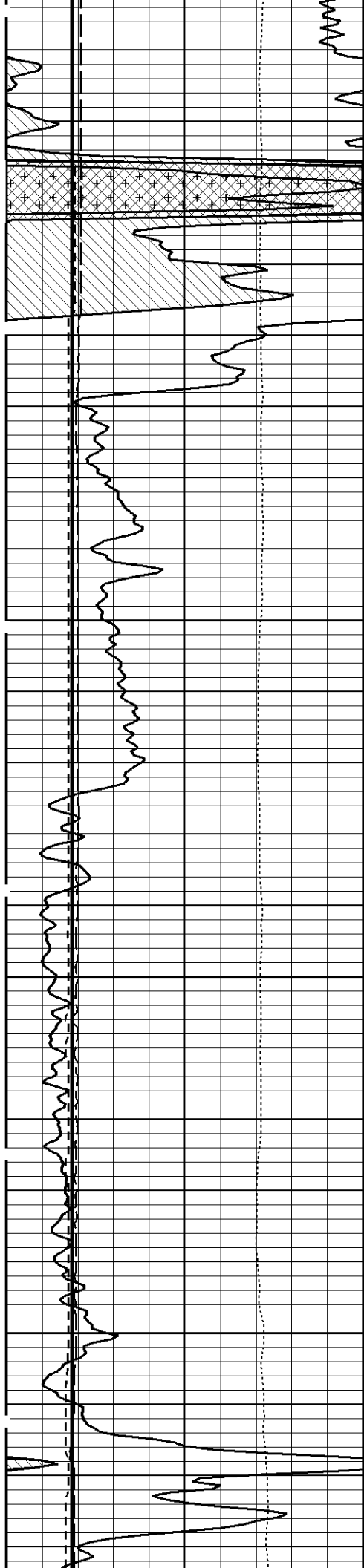


4900

5000

5100

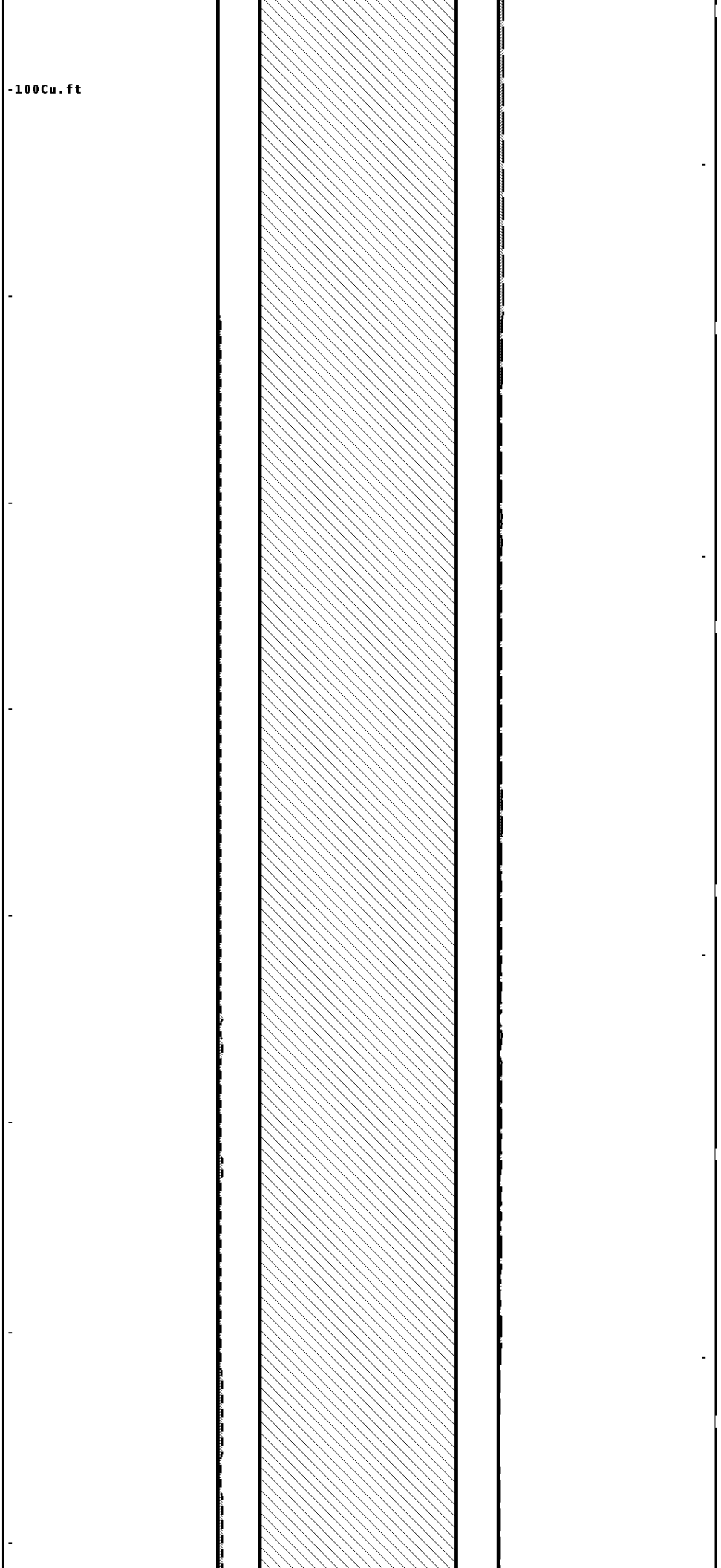


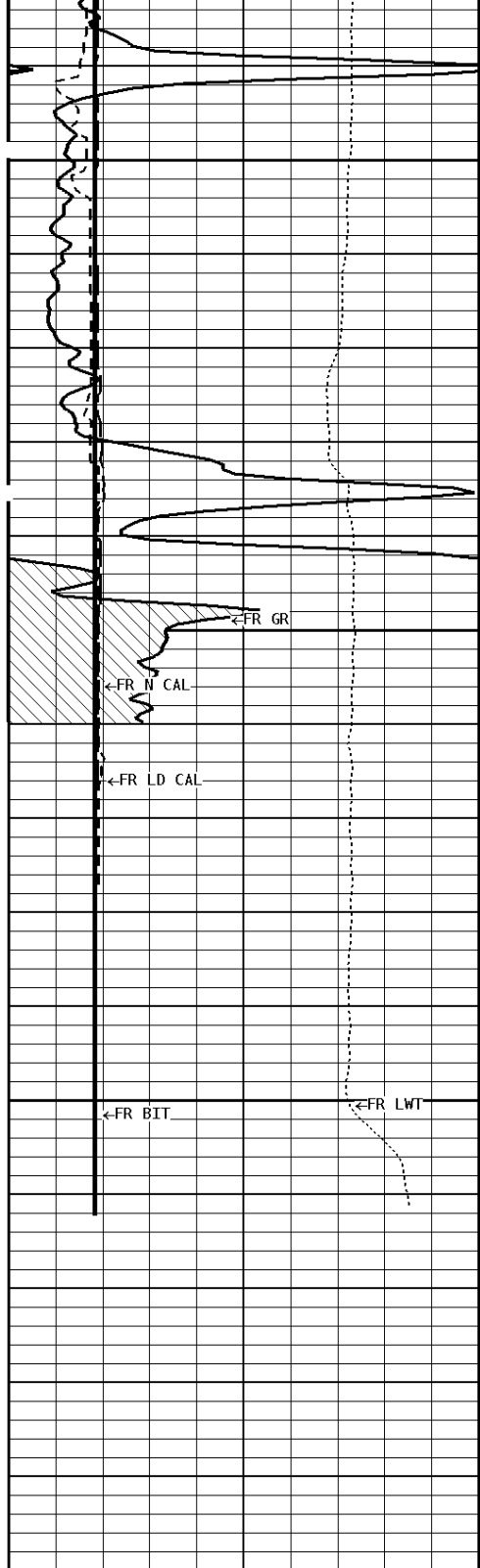


-100Cu.ft

5200

5300



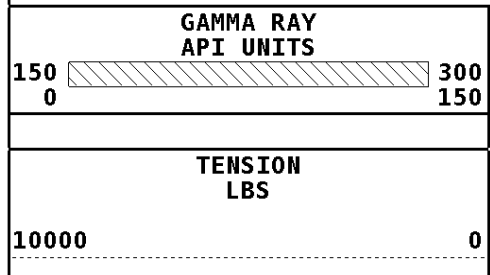
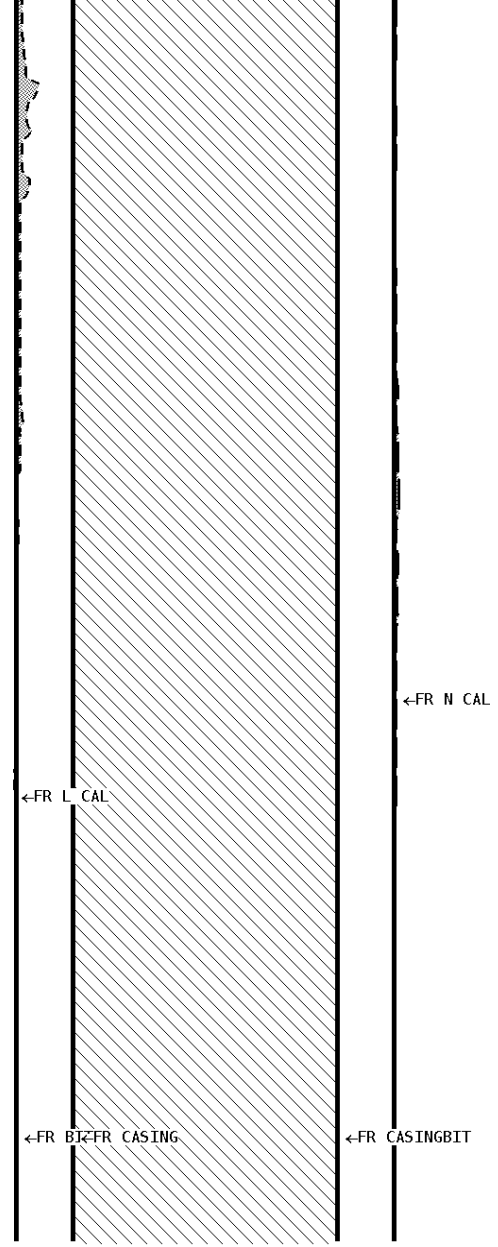


File #1.1.5

5400

5452

1:240 MAIN SECTION



BOREHOLE VOLUME CU.FT	ANNULAR HOLE VOLUME CU.FT.
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**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 : 05-NOV-2014 Time : 11:49
Sensor Suite : GR-GR5 ID : GRT-BB-109

	Measured	Units	Calibrated	Units
GR	Background Jig		Jig	
	48 318	CPS	175	GRAPI

**Shop Calibration
CNT-AA**

Performed : 08-DEC-2014 Time : 11:55
Sensor Suite : CALI-BCN ID : NDT-BD-133

	Jig - Measured	Jig - Calibrated	Units
CL # 1	Ring#1 Ring#2	Ring#1 Ring#2	IN.
	9.1 13.6	6.0 12.0	

**Shop Calibration
LDT-DF**

Performed : 08-DEC-2014 Time : 10:50
Sensor Suite : CALI-LTH ID : PDT-GA-464

	Jig - Measured	Jig - Calibrated	Units
CL # 1	Ring#1 Ring#2	Ring#1 Ring#2	IN.
	7.8 11.2	6.0 12.0	



Tucker
ENERGY SERVICES

Company: CHIEFTAIN OIL CO. INC.

Well: AHS CATTLE CO. #11

Location: 1200' FNL & 660; FEL

Logged: 12-22-2014

K.B. Elev: 1400.0 Ft