



Tucker
ENERGY SERVICES

BOREHOLE VOLUME

CALIPER LOG

Company MULL DRILLING COMPANY, INC. Well TJADEN "C" #4		File No : TUL 59797 Company : MULL DRILLING COMPANY, INC. Well : TJADEN "C" #4 Field : Country : KINGMAN State : KANSAS Country : USA API No : 15-095-22288	
Location : 1980' FSL & 660' FWL NW/4 SW/4		LSD : Sect : 18 Twp : 30S Rge : 7W	
Permanent Datum:	GL	Elevations:	Services:
Drilling Measured From:	KB	KB 1486.00	CNT
Log Measured From:	KB	DF 1485.00	LDT
Above Permanent Datum:	10.00 Ft	GL 1476.00	MLT
Date	09-25-2014		
Run Number	1		
Depth--Driller	4285.0	Ft	
Depth--Logger	4283.0	Ft	
First Reading	4260.0	Ft	
Last Reading	226.0	Ft	
Casing--Driller	223.0	Ft	
Casing--Logger	226.0	Ft	
Bit Size	7.875	In	
Casing Size	8.625	In	
Hole Fluid Type	CHEM GEL		
Density	9.6	lb/gal	
Fluid Loss	10.8		
PH/Viscosity	9.0	55.0 sec/qt	
Sample Source	MEASURED		
RM@Measured Temp.	0.600	@ 65 F	
RMF@Measured Temp	0.480	@ 65 F	
RM@Measured Temp.	0.720	@ 65 F	
Source RMF/RMC	CALCULATED/CALCULATED		
RM@BHT	0.440	@ 125 F	
Time Circulation Stopped	09-25-2014 11:30 pm		
Max Recorded Temp.	125	F	
Equipment/Base	126	TULSA	
Recorded By	S. K. DAVIS / A. S. DIAHO		
Witnessed By			

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	4285.00	8.625	32.00	226.00	0.00

Run Number	1	
Date	09-25-2014	
Date/Time On Bottom	09-26-2014 4:00 am	
Depth to Fluid	0.0 Ft	
Salinity	3000.000 ppm	
RMF@BHT	0.350 @ 125 F	
RMC@BHT	0.520 @ 125 F	

Run Number 1

Comments

ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT, CST, AND PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR HOLE VOLUME CALCULATED USING 5.50" PRODUCTION CASING
 PHIN IS CALIPER CORRECTED
 ANHYDRITE SECTION FROM 1150' TO 800'
 DETAIL SECTION FROM TD TO 2900'

GRT: GRP.
 CNT: PHIN, CLCNIN.
 LDT: PORL, LCORN, PECLN, LDENN, CLLDIN.
 MLT: NOR_RF, INV_RF, MSCLPIN.
 CST: PORS, ITT, CDTF, TT1, TT2, TT3, TT4.
 PIT: ILD, ILM, SFLAEC, CIRD, SPU

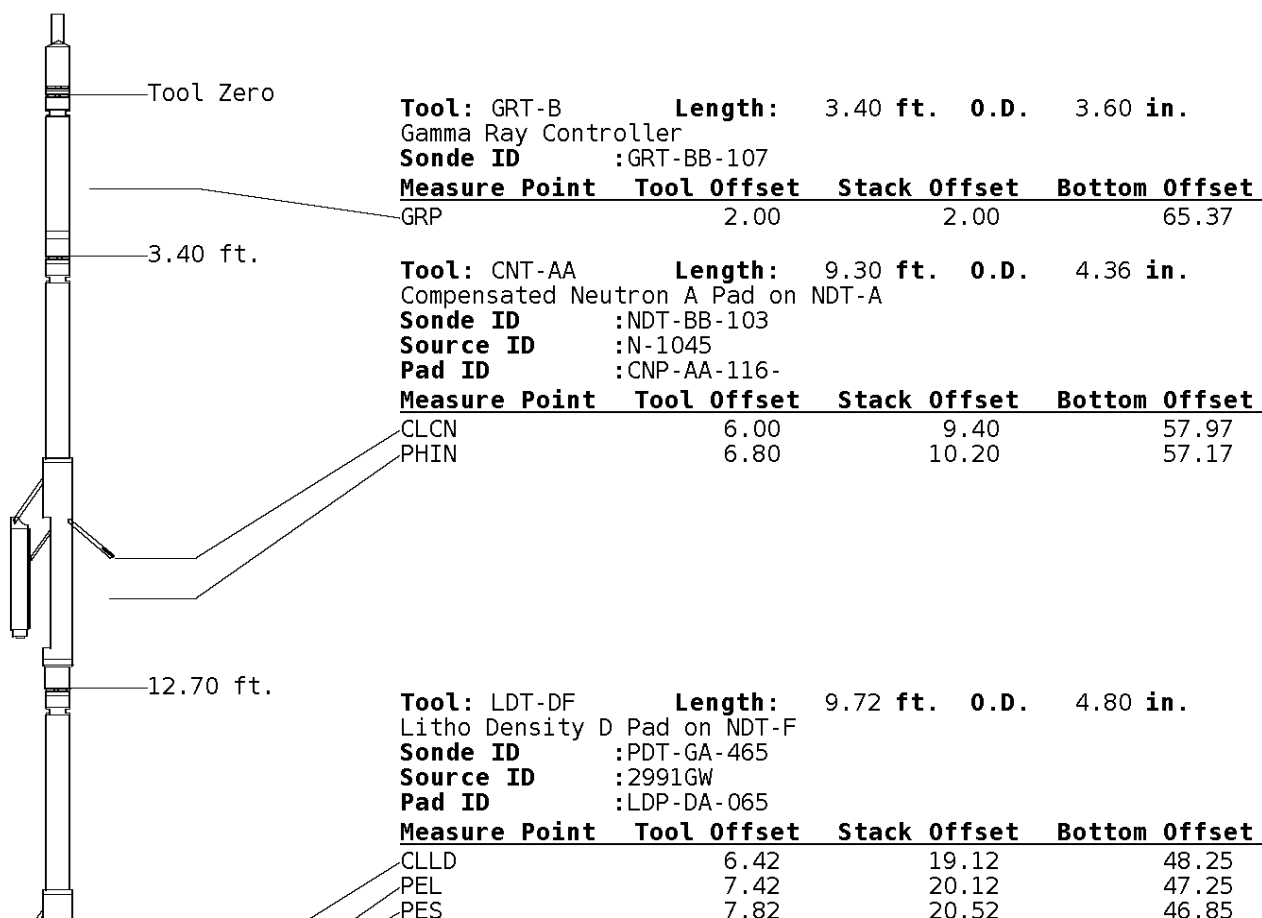
OPERATORS:

C. GONZALES

J OFFEIBGU

Tool String Schematic

Total Tool Length - 67.37 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 1171.00 lbs.



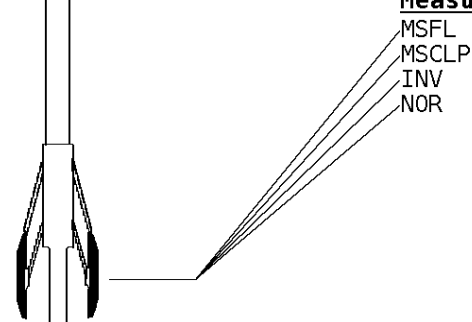


LDEN	7.62	20.32	47.05
LCOR	7.62	20.32	47.05

22.42 ft.

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
Micro Spherically Focused (IC)
Sonde ID :MST-DA-26

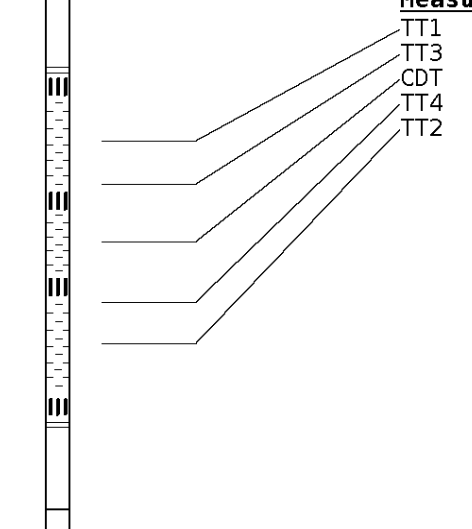
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	30.02	37.35
MSCLP	7.60	30.02	37.35
INV	7.60	30.02	37.35
NOR	7.60	30.02	37.35



32.08 ft.

Tool: CST-AD **Length:** 13.80 ft. **O.D.** 3.60 in.
Open Hole Sonic
Sonde ID :CST-AB-25

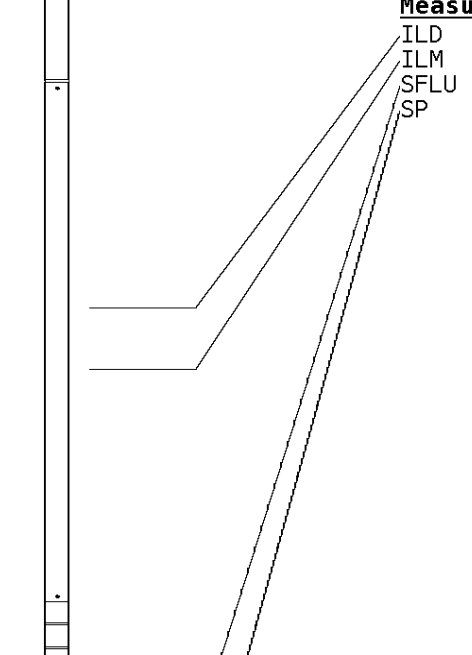
Measure Point	Tool Offset	Stack Offset	Bottom Offset
TT1	4.80	36.88	30.49
TT3	5.80	37.88	29.49
CDT	7.30	39.38	27.99
TT4	8.80	40.88	26.49
TT2	9.80	41.88	25.49



45.88 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	54.80	12.56
ILM	10.10	55.98	11.39
SFLU	17.49	63.37	4.00
SP	20.60	66.48	0.88



LWT 67.37 ft.

Well File: MULL TJADEN C4 SEPT25 QUINT

Scale: 1:240

Format: CAL-240

Segment: V1.D1.S5 MN

Acquired: 2014-09/26 04:07 3.3.0-12594

Reference: 0

Processed: 2014-09/26 05:50 3.3.0-12594

BIT SIZE
INCHES (IN)

6 16

Y CALIPER
INCHES (IN)

16 26
6 16

X CALIPER
INCHES (IN)

16 26
6 16

TENSION
LBS

10000 0

GAMMA RAY
API UNITS

150 300
0 150

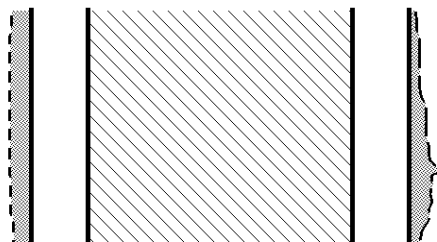
BOREHOLE VOLUME
CU.FT

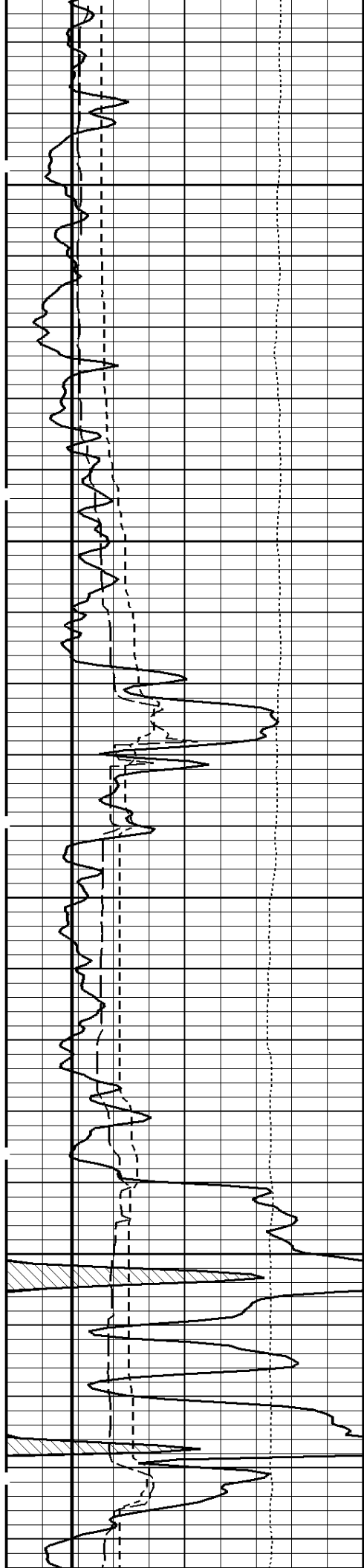
ANNULAR HOLE VOLUME
CU.FT.

1:240 MAIN SECTION

File #1.1.5

2900

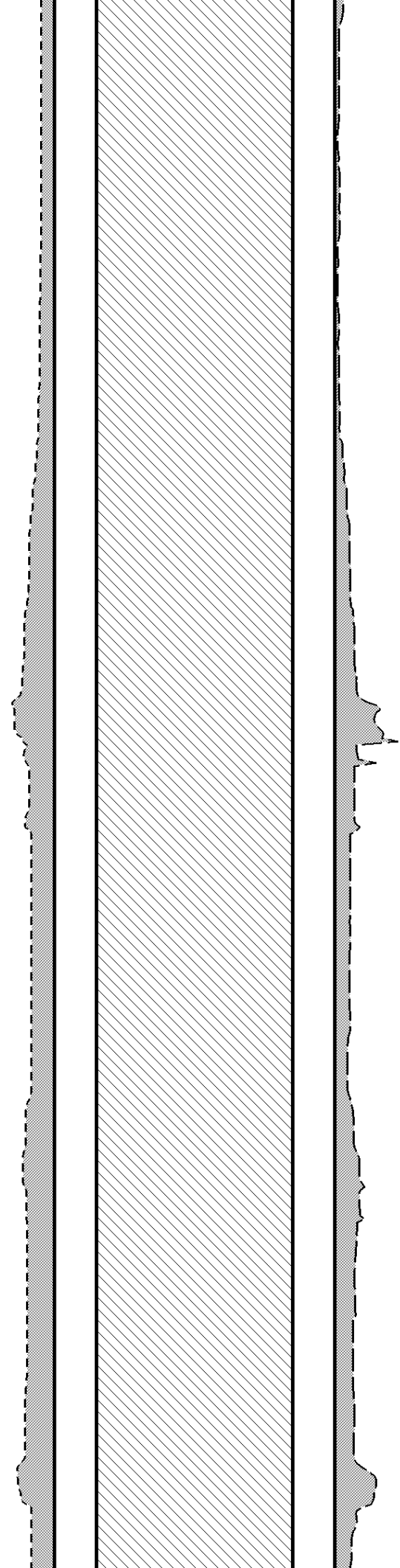




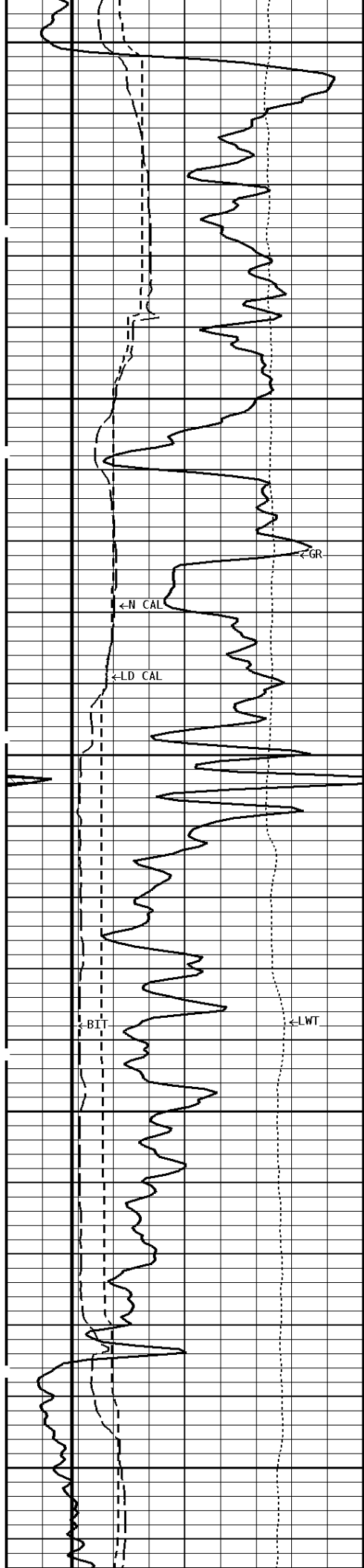
3000

3100

-500Cu.ft



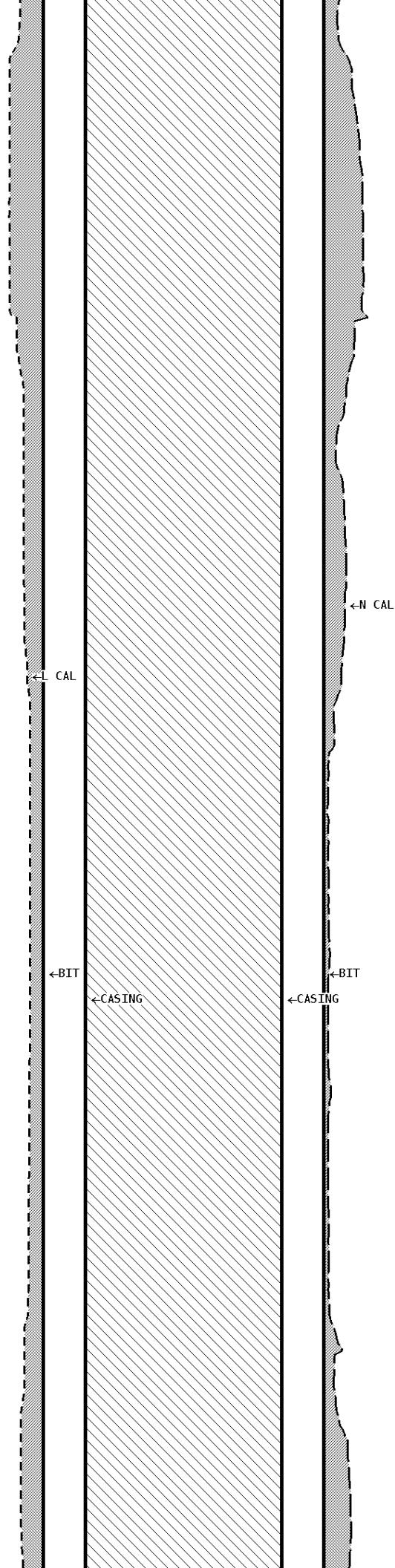
300Cu.ft-

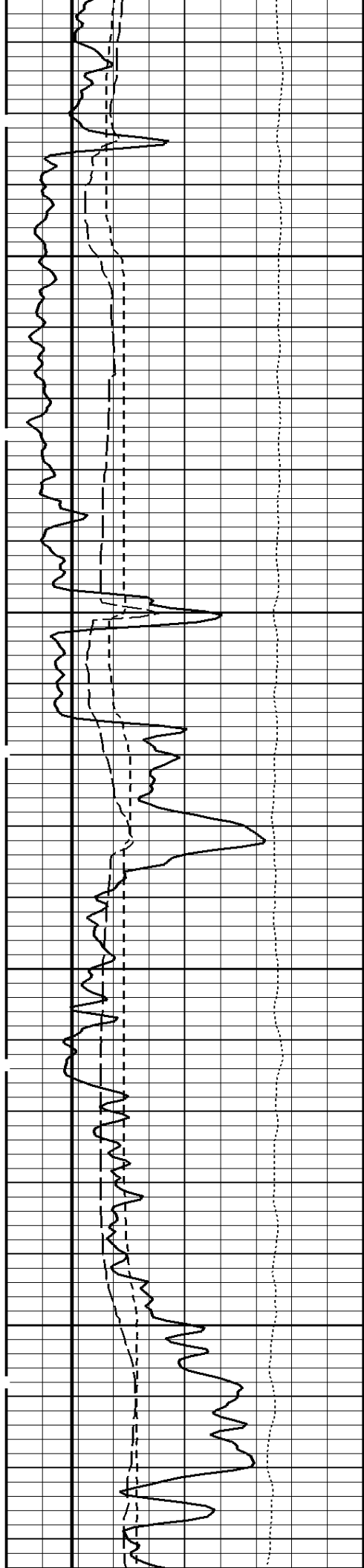


3200

3300

- 400 Cu. ft

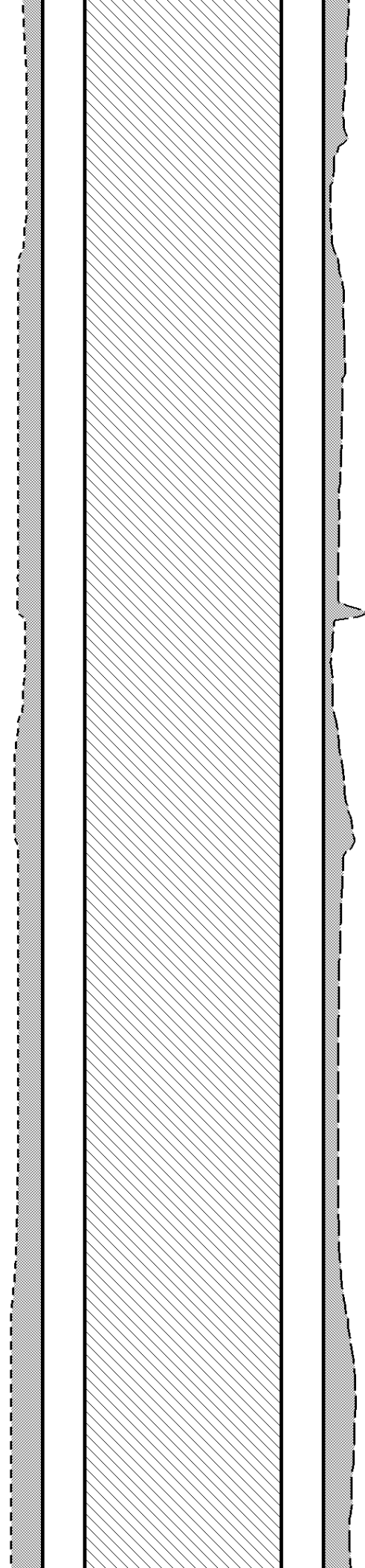




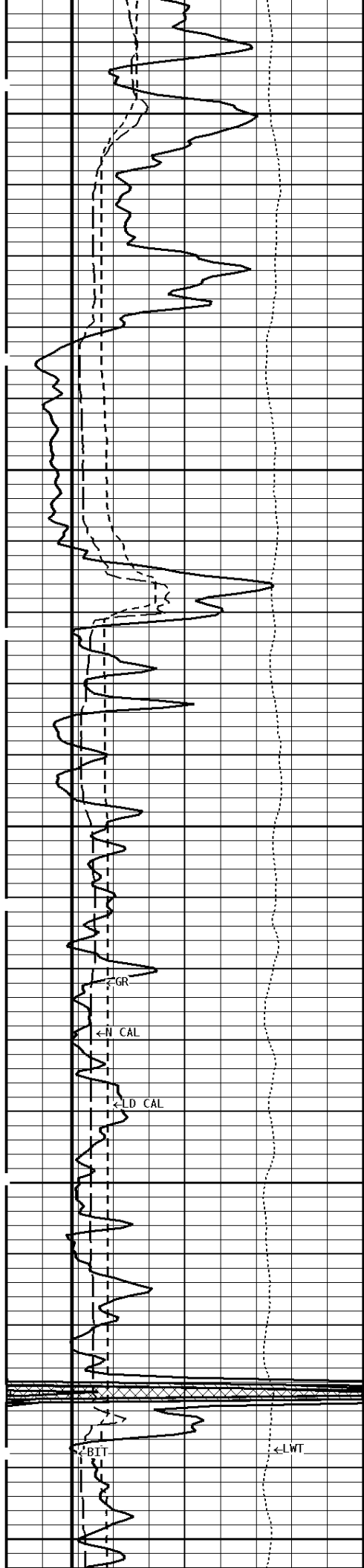
3400

3500

-300Cu.ft



200Cu.ft-

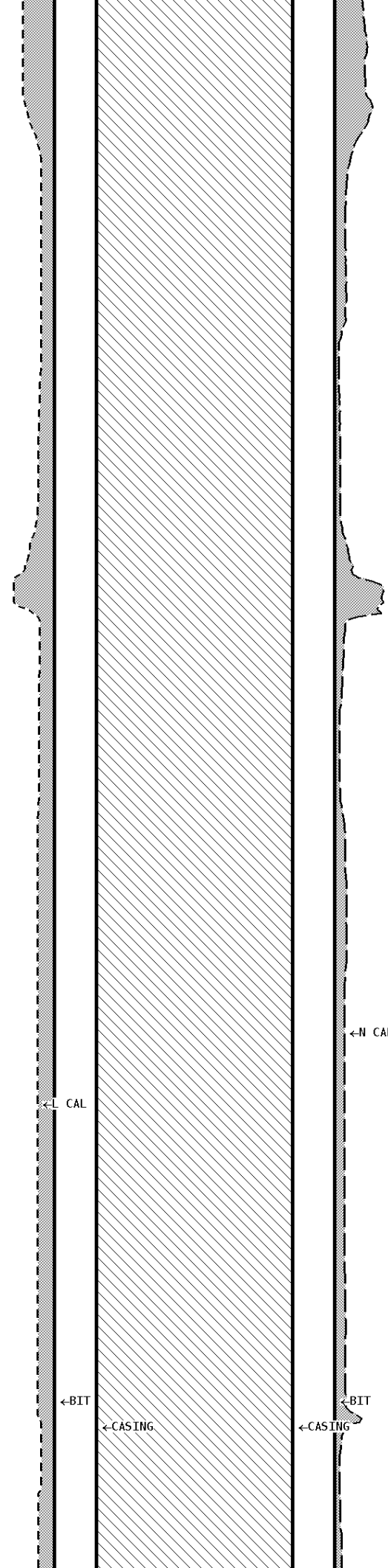


3600

3700

3800

-200Cu.ft



←N CAL

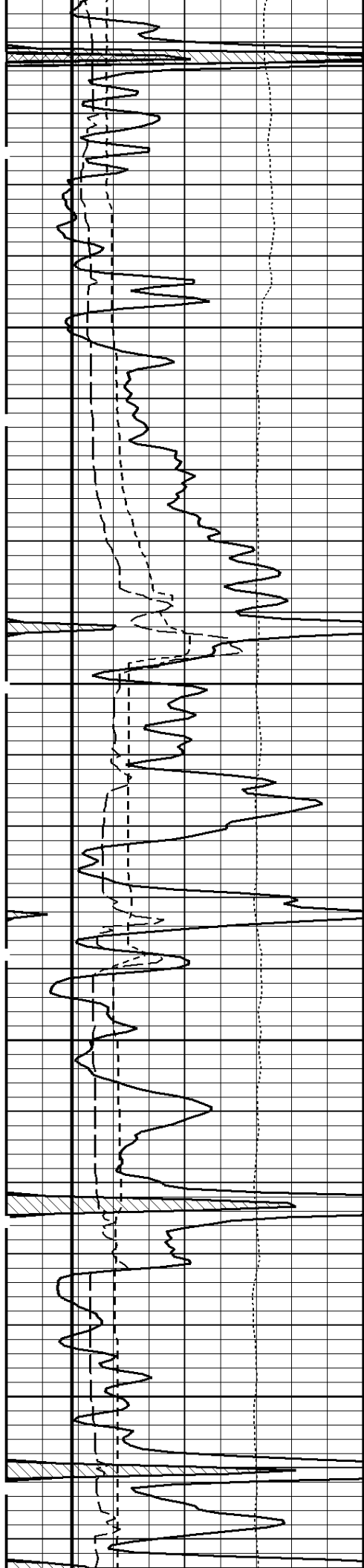
←L CAL

←BIT

←CASING

←BIT

←CASING

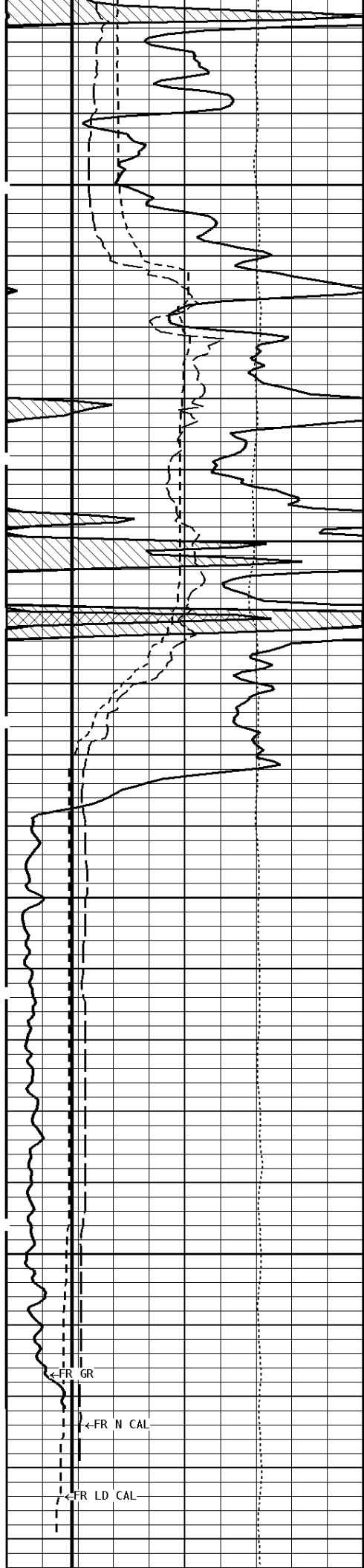


3900

4000

-100Cu.ft

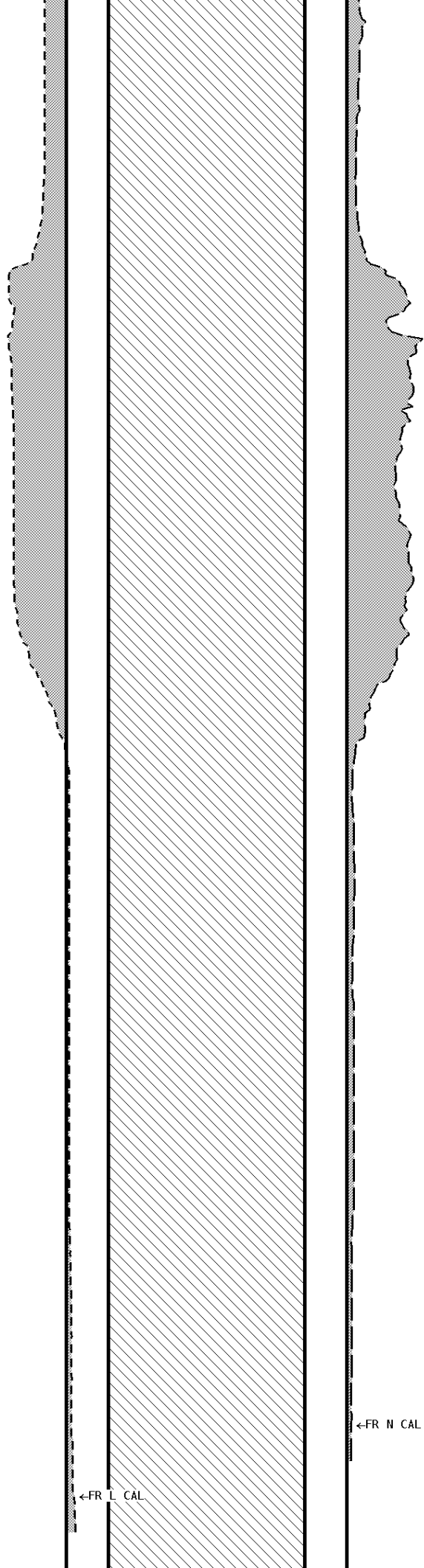
100Cu.ft-



4100

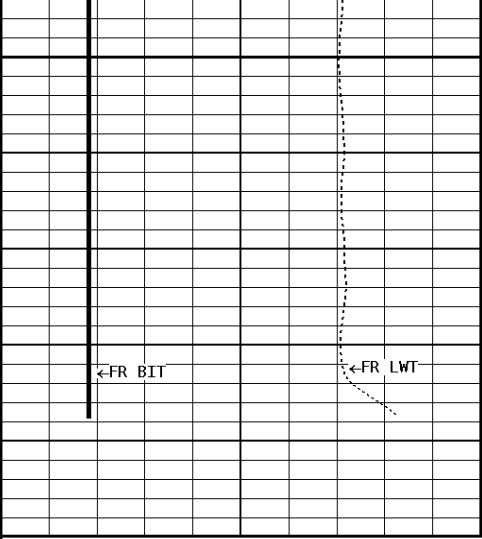
4200

←FR GR
←FR N CAL
←FR LD CAL

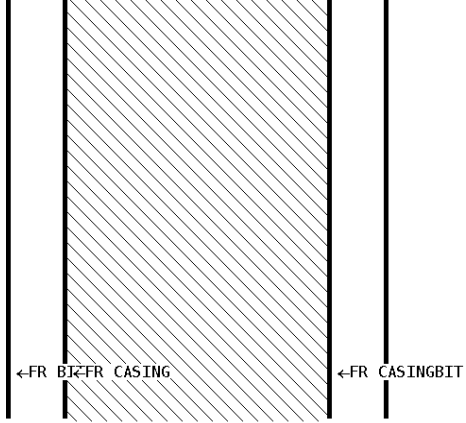


←FR L CAL

←FR N CAL



4283



1:240 MAIN SECTION

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

BOREHOLE VOLUME CU.FT	ANNULAR HOLE VOLUME CU.FT.
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* 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 : 21-APR-2014			Time : 11:21		
Sensor Suite : GR-GR5			ID : GRT-BB-107		
	Measured	Units	Calibrated	Units	
GR	Background	Jig	Jig		GR-API
	75	381	175		
Shop Calibration CNT-AA					
Performed : 22-SEP-2014			Time : 10:50		
Sensor Suite : CALI-BCN			ID : NDT-BB-103		

Sensor Suite 1 CALI 100		100' R37 100 100		
	Jig - Measured	Jig - Calibrated	Units	
	Ring#1	Ring#2	Ring#1	Ring#2
CL # 1	9.1	14.0	6.0	12.0
IN.				
Shop Calibration				
LDT-DF				
Performed : 04-SEP-2014			Time : 13:21	
Sensor Suite : CALI-LTH			ID : PDT-GA-465	
	Jig - Measured	Jig - Calibrated	Units	
	Ring#1	Ring#2	Ring#1	Ring#2
CL # 1	7.2	10.9	6.0	12.0
IN.				

 Tucker ENERGY SERVICES	Company:	MULL DRILLING COMPANY, INC.
	Well:	TJADEN "C" #4
	Location:	1980' FSL & 660' FWL
	Logged:	09-25-2014
	K.B. Elev:	1486.0 Ft