Schlumberger

Company: Lamont Doherty

Well: IODP EXP 304 Site 1309A
Field: Atlantis Massis
Country: Mid Atlantic Ridge Ocean: Atlantic Ocean

Dual Laterlog

Country: Mid Atlantic Ridge
Field: Atlantis Massis
Location: Rig- Joides Resolution
Well: IODP EXP 304 Site 1309A
Company: Lamont Doherty

LOCATION

Rig- Joides Resolution

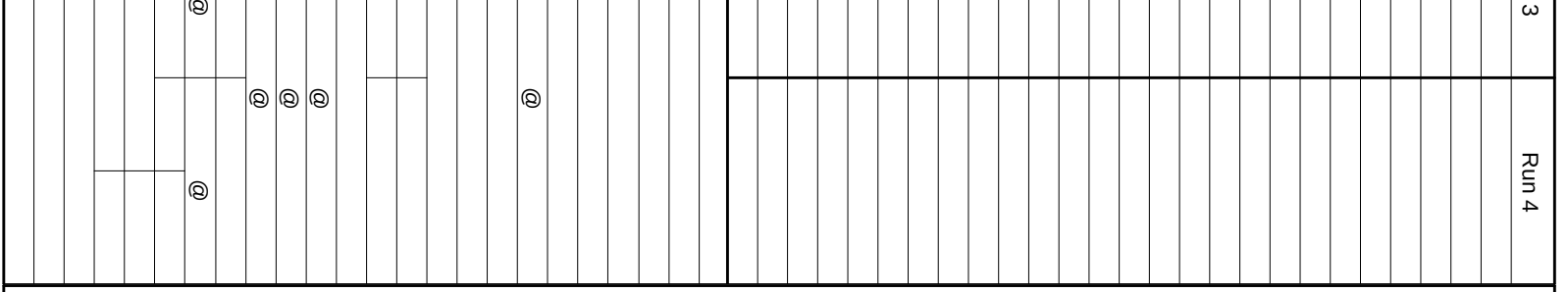
Elev.: K.B. 11.3 m
G.L. -1653.4 m
D.F. 11 m

Permanent Datum: GROUND LEVEL Elev.: 0 m
Log Measured From: DES 11.3 m above Perm. Datum
Drilling Measured From: DES

API Serial No.	Max. Hole Devi.	Longitude	Latitude
		42.11865 W	30.16847 N

	Run 1	Run 2	Run
Logging Date			
Run Number	1		
Depth Driller	1755.2 m		
Schlumberger Depth	1746.5 m		
Bottom Log Interval	1744 m		
Top Log Interval	1593 m		
Casing Driller Size @ Depth	0.000 in @ 1675 m	@	@
Casing Schlumberger	1674 m		
Bit Size	9.875 in		
Type Fluid In Hole	Sepiolite		
MUD Density / Viscosity	1.066 g/cm3		
MUD Fluid Loss / PH	0 cm3		
MUD Source Of Sample			
RM @ Measured Temperature	0.322 ohm.m @ 23 degC	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC			
RM @ MRT / RMF @ MRT	0.362 @ 18	@ 18	@ @
Maximum Recorded Temperatures	18 degC		
Circulation Stopped / Time	11/30/04	0400	
Logger On Bottom / Time	11/30/04	See Log	
Unit Number / Location	99 Houston		
Recorded By	Steve Kittredge		
Witnessed By	Florence Einaudi		

	Run 1	Run 2	Run
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@	@	@
Maximum Recorded Temperatures			
Circulation Stopped / Time			
Logger On Bottom / Time			
Unit Number / Location			
Recorded By			
Witnessed By			



DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1	OTHER SERVICES2
OS1: MESTB/DSI/SGTN	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole Cored with RCB	
All depths in Meters Below Rig Floor (MBRF).	
Hole flushed with Sepiolite	
Sea Floor Driller: 1653.4 MBRF	
Sea Floor Logger: 1653.4 MBRF	
Total Depth Driller: 1755.2 MBRF	
Total Depth Logger: 1746.5	
Casing Bottom Driller: 1675 MBRF	
Casing Bottom Logger: 1674	
APS minitrons off on repeat pass.	

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:		12C0-301	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

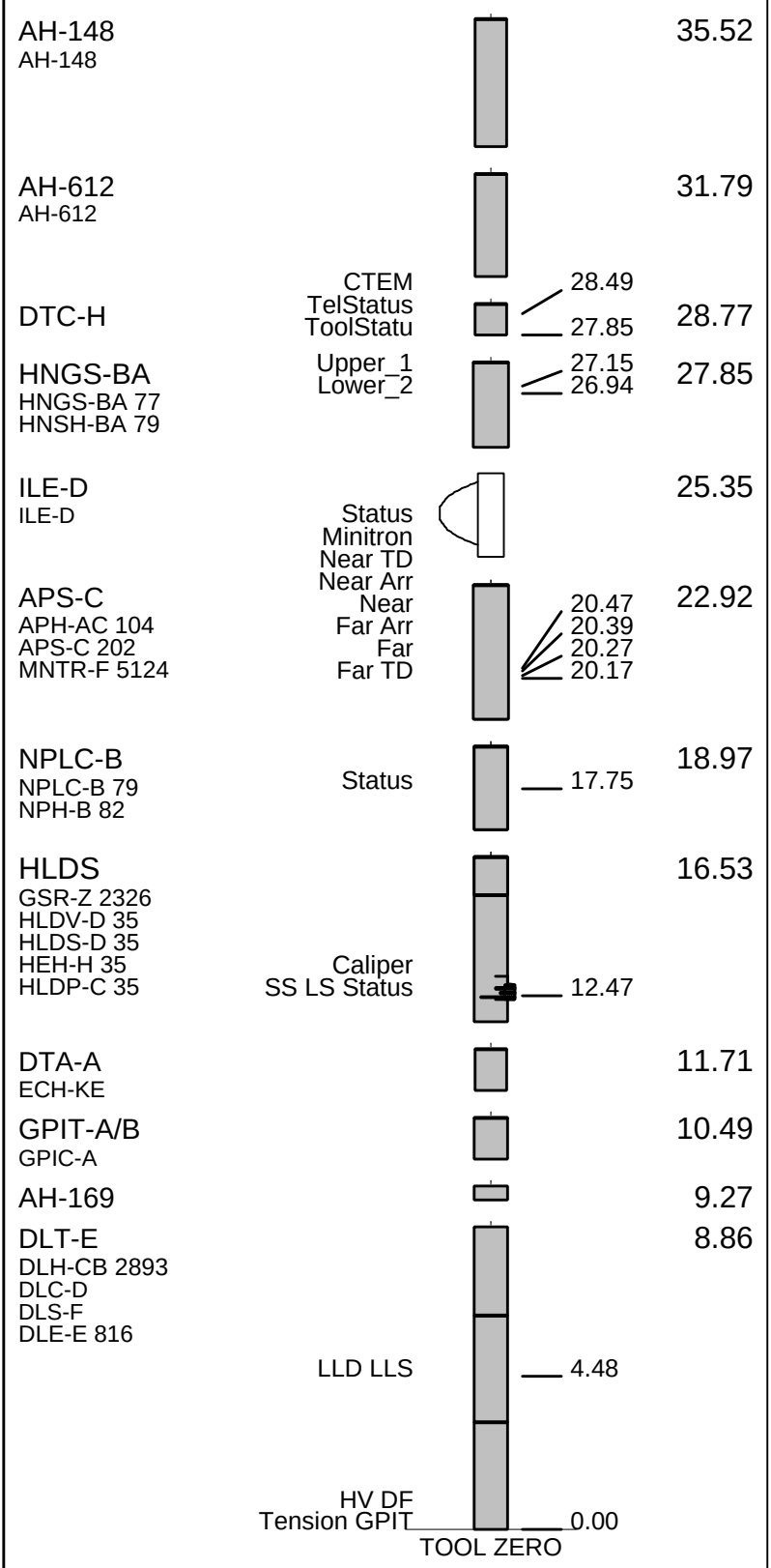
LCM-AA
SFT-281 6250
SFT-178 6250
GSR-U 135
WITM (DTS)-A

DOWNHOLE EQUIPMENT

BSP 60.80
BRT-S

SP SPARC 39.74

LEH-QT 36.41



MAXIMUM STRING DIAMETER 3.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Company: Lamont Doherty Earth Observatory | Well: 1309

Output DLIS Files

DEFAULT	DLL_LDL_APS_NGS_042LUP	FN:41	PRODUCER	30-Nov-2004 12:10	1746.5 M	1593.0 M

OP System Version: 12C0-301

MCM

Main Up Log

DLT-E	12C0-301	GPIT-A/B	12C0-301
DTA-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
LLOO	OFF	BOTH	1748.7 12:11:56
	BOTH	OFF	1748.7 12:12:16
	OFF	BOTH	1713.5 12:20:33
	BOTH	OFF	1712.7 12:21:09
	OFF	BOTH	1666.9 12:31:39

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)
10000 (LBF) 0

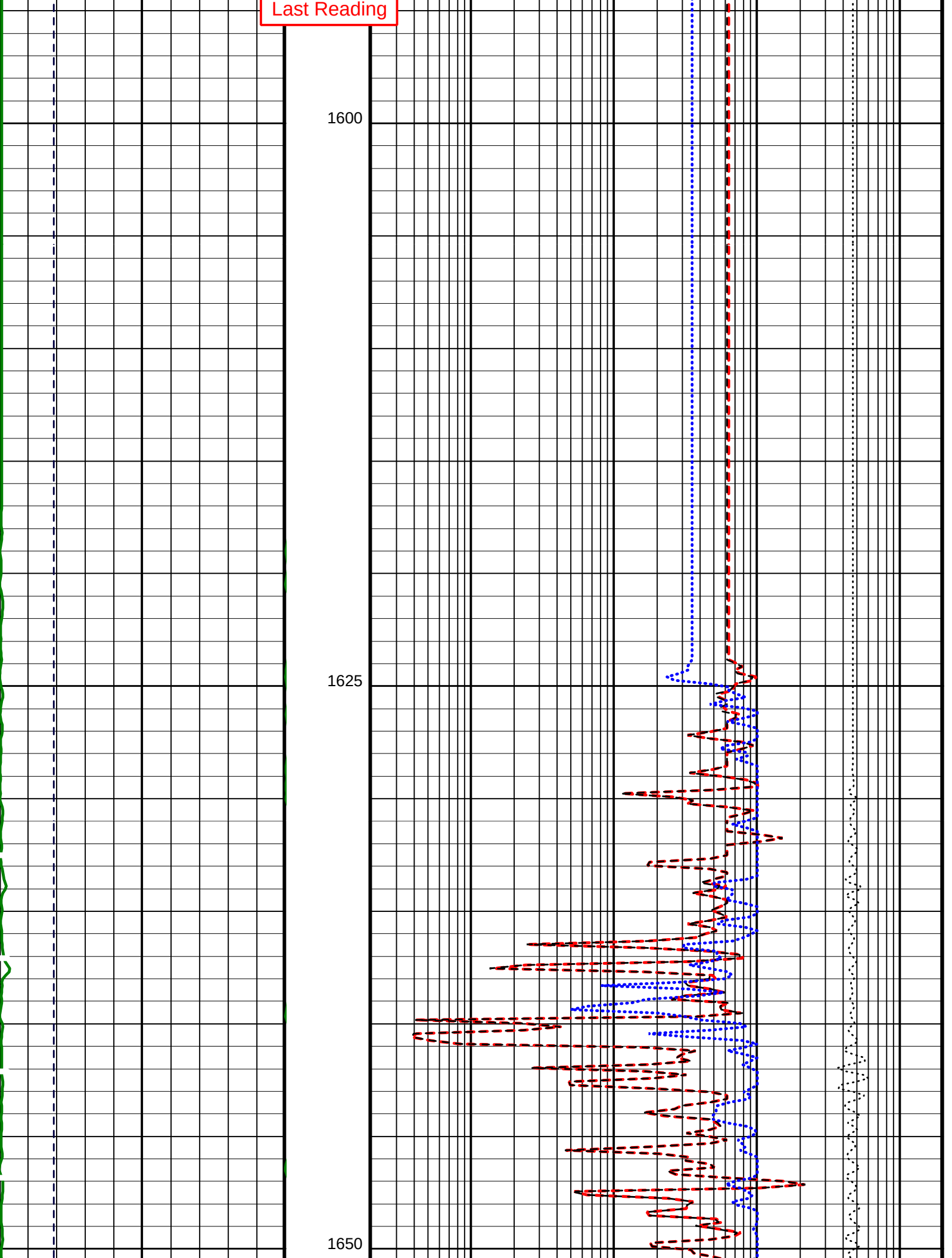
Laterolog Shallow Resistivity (LLS)
0.2 (OHMM) 2000

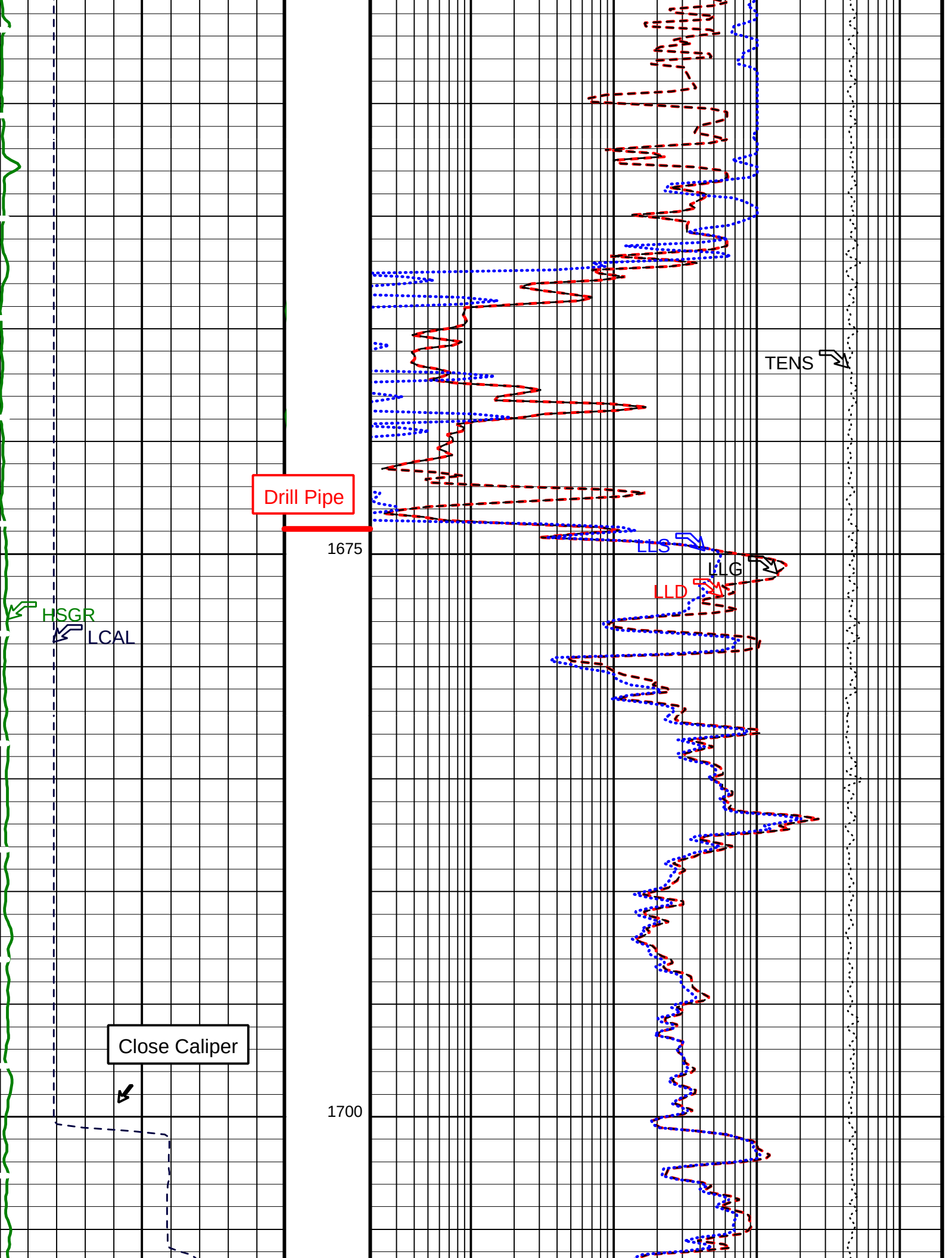
HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

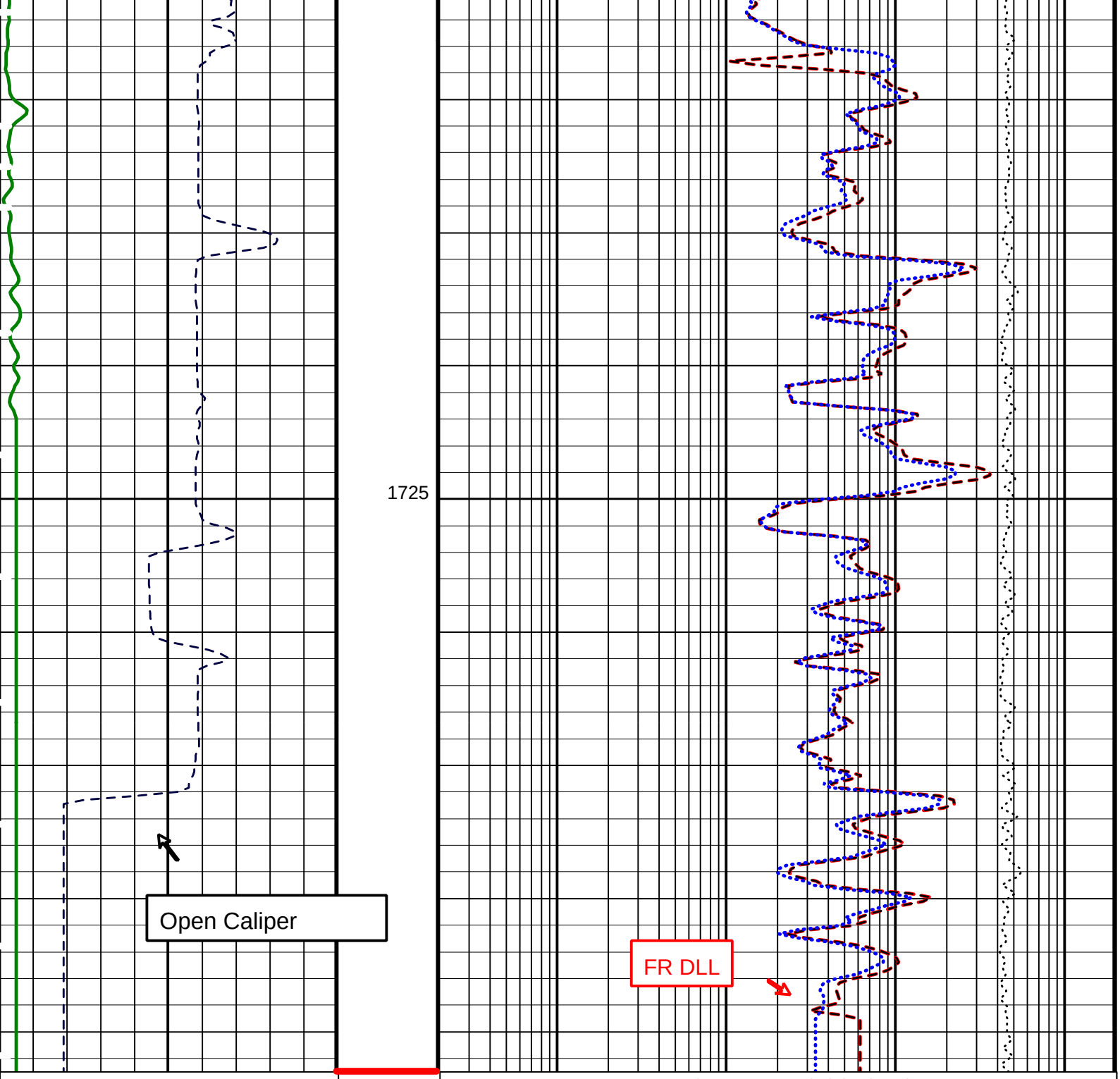
Laterolog Groningen Resistivity (LLG)
0.2 (OHMM) 2000

HLDS Caliper (LCAL)
0 (IN) 20

Laterolog Deep Resistivity (LLD)
0.2 (OHMM) 2000


Last Reading
1600
1625
1650


TENS
Drill Pipe
1675
LLS
LLG
LLD
HSGR
LCAL
Close Caliper
1700



HLDS Caliper (LCAL)
0 (IN) 20

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

Laterolog Deep Resistivity (LLD)
0.2 (OHMM) 2000

Laterolog Groningen Resistivity (LLG)
0.2 (OHMM) 2000

Laterolog Shallow Resistivity (LLS)
0.2 (OHMM) 2000

Tension (TENS)
10000 (LBF) 0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value

	DLT-E: DUAL LATEROLOG - E		
DPRF	DEEP REFERENCE POWER	550	NW
KFAC	K FACTOR	SOND	
LLOO	LATEROLOG LOOP	BOTH	
PLRM	POWER LOOP REFERENCE MODE	DEEP	
SPRF	SHALLOW REFERENCE POWER	550	NW
	APS-C: Accelerator-Porosity Tool		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	HNGS-BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	0	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.10	G/C3

Format: DLT_DST Vertical Scale: 1:200 Graphics File Created: 30-Nov-2004 12:11

OP System Version: 12C0-301

MCM

DLT-E	12C0-301	GPIT-A/B	12C0-301
DTA-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Output DLIS Files

DEFAULT	DLL_LDL_APS_NGS_042LUP	FN:41	PRODUCER	30-Nov-2004 12:10	

Company: Lamont Doherty Earth Observatory Well: 1309

Output DLIS Files

DEFAULT	DLL_LDL_APS_NGS_040LUP	FN:39	PRODUCER	30-Nov-2004 11:31	1746.5 M	1632.2 M

OP System Version: 12C0-301

MCM

Repeat Up Log

DLT-E	12C0-301	GPIT-A/B	12C0-301
DTA-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
LLOO	OFF	BOTH	1748.7 11:33:27
	BOTH	OFF	1747.8 11:34:01
	OFF	BOTH	1747.7 11:34:05

BOTH		OFF	1747.1 11:34:28
OFF		BOTH	1729.9 11:38:58
BOTH		OFF	1729.2 11:39:41

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)
10000 (LBF) 0

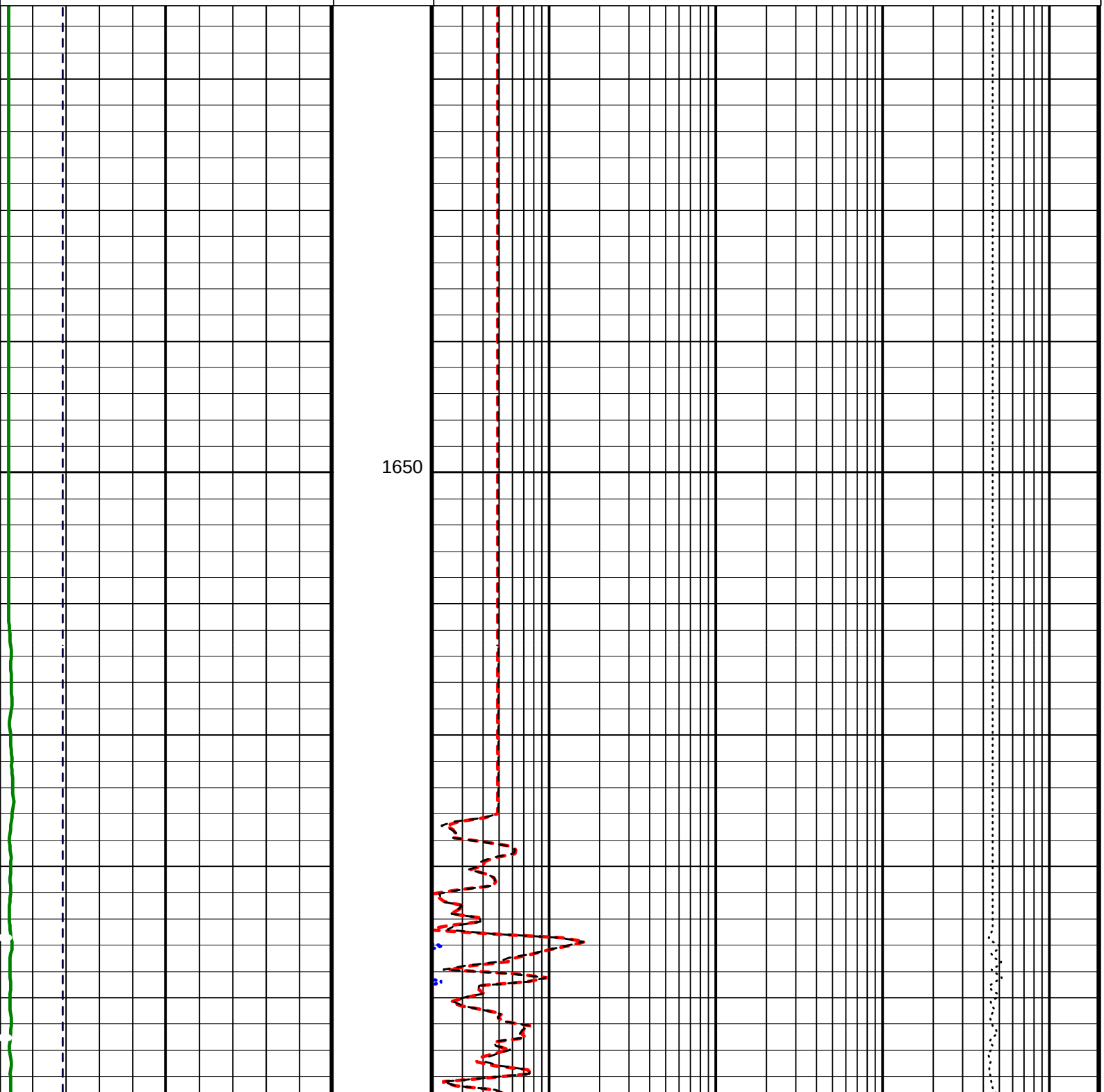
Laterolog Shallow Resistivity (LLS)
0.2 (OHMM) 2000

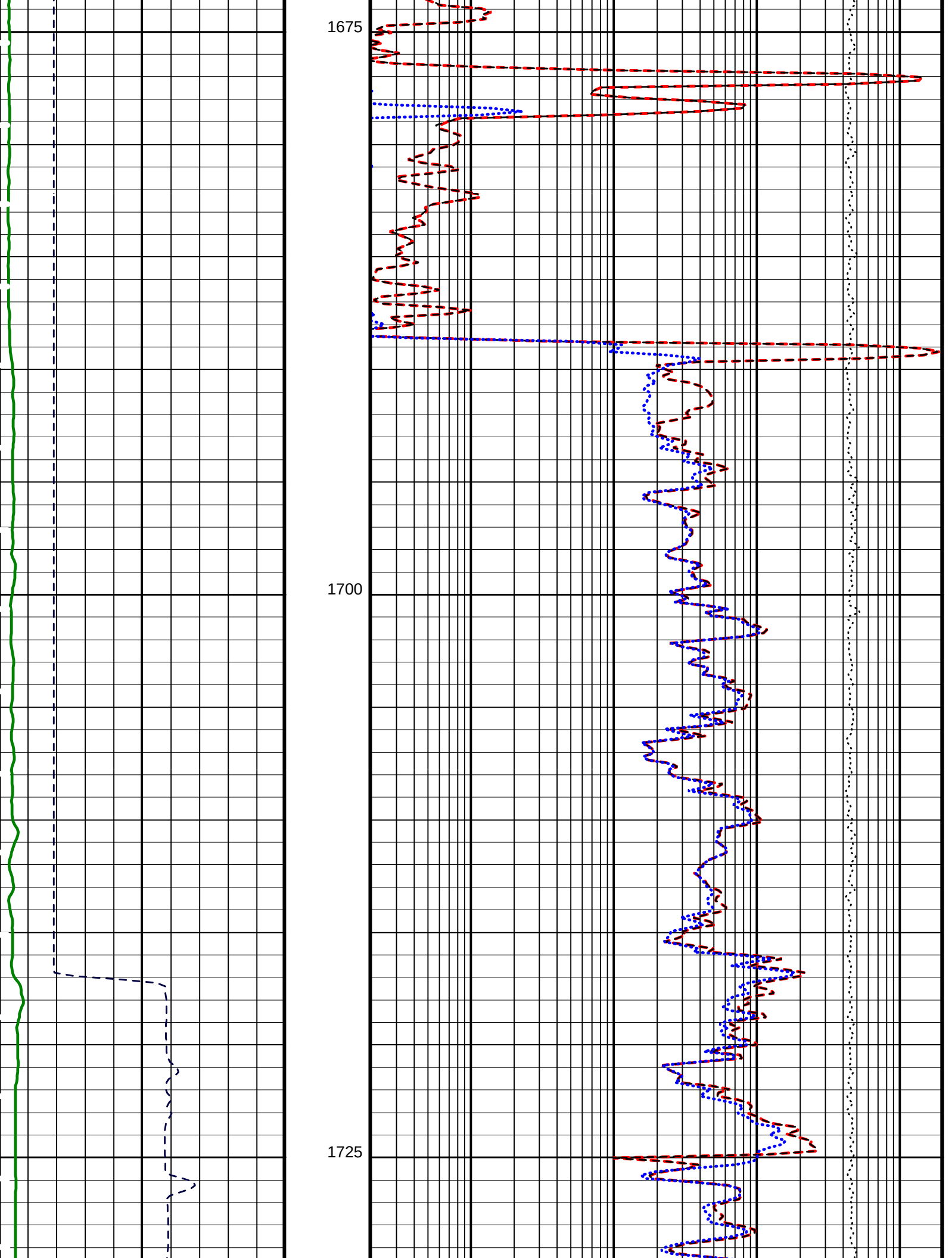
HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

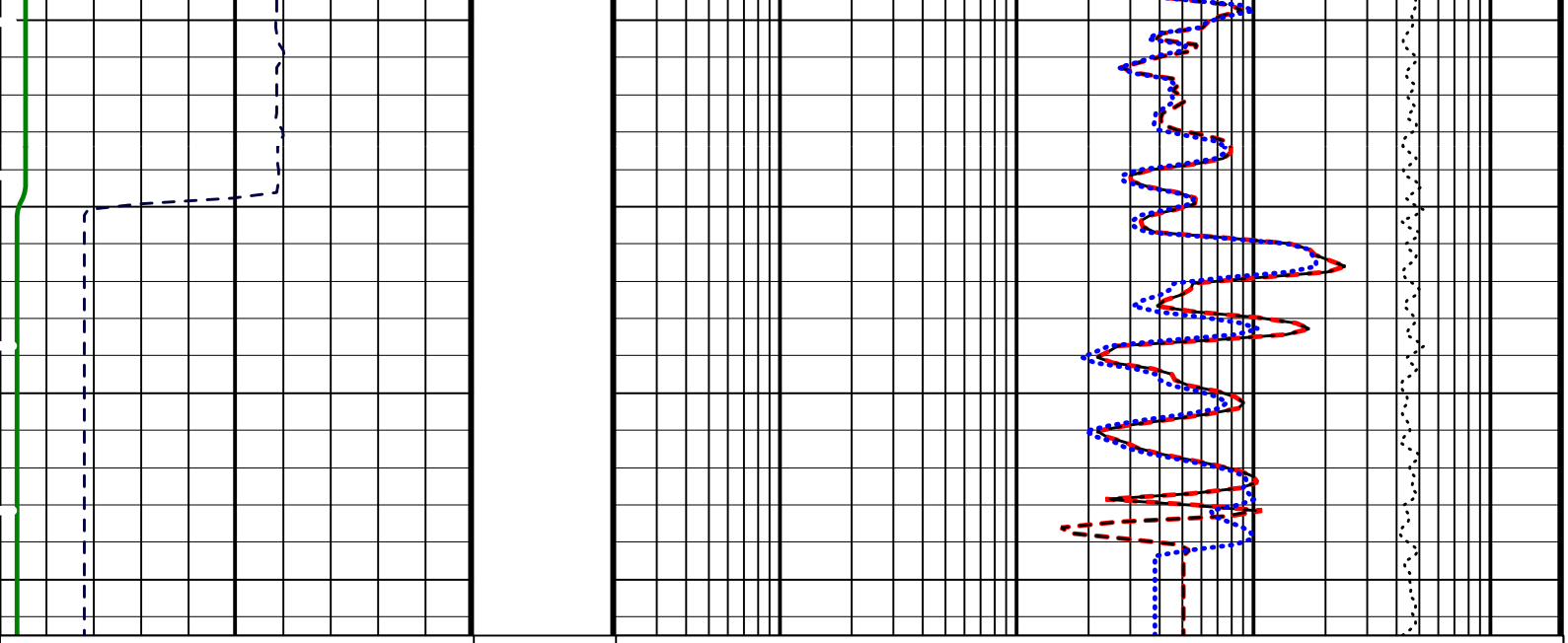
Laterolog Groningen Resistivity (LLG)
0.2 (OHMM) 2000

HLDS Caliper (LCAL)
0 (IN) 20

Laterolog Deep Resistivity (LLD)
0.2 (OHMM) 2000




1675
1700
1725



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DLT-E: DUAL LATEROLOG - E		
DPRF	DEEP REFERENCE POWER	550	NW
KFAC	K FACTOR	SOND	
LLOO	LATEROLOG LOOP	BOTH	
PLRM	POWER LOOP REFERENCE MODE	DEEP	
SPRF	SHALLOW REFERENCE POWER	550	NW
	APS-C: Accelerator-Porosity Tool		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	HNGS-BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	LCAL	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	0	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	0.1	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	0.1	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	

BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.10	G/C3

Format: DLT_DST Vertical Scale: 1:200 Graphics File Created: 30-Nov-2004 11:31

OP System Version: 12C0-301

MCM

DLT-E	12C0-301	GPIT-A/B	12C0-301
DTA-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Output DLIS Files

DEFAULT	DLL_LDL_APS_NGS_040LUP	FN:39	PRODUCER	30-Nov-2004 11:31

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
DUAL LATEROLOG - E Wellsite Calibration - DLT ELECTRONICS CALIBRATION Laterolog Measurement							
Before: 30-Nov-2004 11:28 After: 30-Nov-2004 13:42							
MEASURED LLD	31.62	N/A	31.97	31.97	-0.004875	0.9000	OHMM
MEASURED LLS	31.62	N/A	31.22	31.21	-0.01589	0.9000	OHMM
General Purpose Inclinometer Wellsite Calibration - CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 30-Nov-2004 11:29							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	99	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	3	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	743	N/A	N/A	N/A	
General Purpose Inclinometer Wellsite Calibration - CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 30-Nov-2004 11:29							
TEMPERATURE REFERENCE :	N/A	N/A	25	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	91	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	5	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	98	N/A	N/A	N/A	
Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement							
Master: 30-Sep-2004 18:56 Before: 21-Nov-2004 14:36 After: 30-Nov-2004 13:49							
SS Cs Resolution Bkg	9.000	8.329	8.426	8.459	0.03366	1.800	%
LS Cs Resolution Bkg	9.000	8.007	8.060	7.996	-0.06375	1.800	%
LSW1 Background	100.0	81.66	82.11	81.22	-0.8884	3.000	CPS
LSW2 Background	100.0	75.32	75.20	75.00	-0.2022	3.000	CPS
LSW3 Background	200.0	169.8	170.1	168.3	-1.762	6.000	CPS
LSW4 Background	250.0	211.0	209.7	207.7	-1.956	7.500	CPS
LSW5 Background	600.0	472.0	471.9	469.2	-2.655	18.00	CPS
SSW1 Background	100.0	80.12	79.12	79.65	0.5346	3.000	CPS
SSW2 Background	200.0	142.7	141.7	141.2	-0.4956	6.000	CPS
SSW3 Background	500.0	380.2	379.4	377.2	-2.239	15.00	CPS
SSW4 Background	270.0	204.2	202.5	203.3	0.8192	8.100	CPS
SSW5 Background	200.0	148.3	149.0	147.2	-1.787	6.000	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement							
Master: 30-Sep-2004 20:50							
LSW1 Aluminum	600.0	545.3	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	836.3	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	1030	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	523.0	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	489.9	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2448	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	7149	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	10380	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4420	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	606.6	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement							
Master: 30-Sep-2004 20:27							
LSW1 Iron	400.0	378.7	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	680.1	N/A	N/A	N/A	N/A	CPS

LSW3 Iron	1000	913.1	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	474.1	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	445.7	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1808	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5916	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	9378	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3977	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	530.0	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration
Before: 21-Nov-2004 14:28

HLDS Caliper Small Ring	3.625	N/A	3.122	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	18.25	N/A	20.31	N/A	N/A	N/A	IN

Accelerator-Porosity Tool Wellsite Calibration - Detector Background
Master: 3-Oct-2004 23:49 Before: 21-Nov-2004 16:28 After: 30-Nov-2004 13:47

Near Det Bkg Cntrate	30.00	25.75	24.51	26.00	1.495	N/A	CPS
Far Det Bkg Cntrate	30.00	26.19	26.56	25.99	-0.5650	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	28.51	26.42	26.55	0.1329	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	25.90	25.42	25.50	0.08306	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	26.41	24.41	25.14	0.7233	N/A	CPS

Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios
Master: 3-Oct-2004 23:49

Near/Far Calibration Ratio	0.9250	0.9637	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	0.9915	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.001	N/A	N/A	N/A	N/A	

Accelerator-Porosity Tool Wellsite Calibration - Tank Check
Master: 3-Oct-2004 23:49

Array-1 Standoff Porosity	11.75	12.56	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	12.06	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.739	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	1.010	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9869	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.15	N/A	N/A	N/A	N/A	CU

Accelerator-Porosity Tool Wellsite Calibration - CCR7 signal boxes
Master: 3-Oct-2004 22:46

Near Detector Plateau Setting	1650	1740	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2078	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1972	N/A	N/A	N/A	N/A	V

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check
Master: 1-Oct-2004 10:17 Before: 1-Oct-2004 10:23 After: 30-Nov-2004 13:49

Na 511 Peak Loc	40.00	40.65	40.64	40.65	0.002113	1.000	
Na 511 Peak Res	15.50	16.58	16.95	18.85	1.900	2.000	%
High Voltage	1150	1253	1253	1256	3.013	N/A	V
Na 1785 Peak Loc	142.6	145.0	145.4	145.8	0.4199	7.000	
Na 1785 Peak Res	8.500	10.28	9.865	10.74	0.8727	2.000	%
Temperature	15.50	15.77	15.80	25.90	10.10	N/A	DEGC
Na Count Rate	45.00	49.79	50.40	47.07	-3.332	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check
Master: 1-Oct-2004 10:17 Before: 1-Oct-2004 10:23 After: 30-Nov-2004 13:49

Na 511 Peak Loc	40.00	40.59	40.56	40.68	0.1211	1.000	
Na 511 Peak Res	15.50	16.82	16.90	17.80	0.9001	2.000	%
High Voltage	1150	1273	1274	1276	2.840	N/A	V
Na 1785 Peak Loc	142.6	144.9	144.9	144.6	-0.3469	7.000	
Na 1785 Peak Res	8.500	10.50	9.293	10.70	1.407	2.000	%
Temperature	15.50	14.93	14.94	26.01	11.07	N/A	DEGC
Na Count Rate	45.00	49.97	50.71	47.39	-3.319	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2
Master: 1-Oct-2004 10:17 Before: 1-Oct-2004 10:23 After: 30-Nov-2004 13:49

Coincidence Count Rate Ratio	1.000	0.9965	0.9939	0.9932	-0.0006638	0.05000	

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1740 V
Far Detector Plateau Setting 2078 V
Array Detector Plateau Setting 1972 V

DUAL LATEROLOG - E / Equipment Identification

Primary Equipment:

Primary Equipment:

Auxiliary Equipment:

Dual Laterolog Electrode	DLE - E	816
Dual Laterolog Sonde	DLS - F	
Dual Laterolog Housing	DLH - CB	2893
Dual Laterolog Cartridge	DLC - D	
Laterolog Control Module	LCM - AA	

DUAL LATEROLOG - E Wellsite Calibration

DLT ELECTRONICS CALIBRATION Laterolog Measurement

Phase	MEASURED LLD OHMM	Value
Before		31.97
After		31.97

29.00 (Minimum) 31.62 (Nominal) 40.00 (Maximum)

Phase	MEASURED LLS OHMM	Value
Before		31.22
After		31.21

29.00 (Minimum) 31.62 (Nominal) 40.00 (Maximum)

Before: 30-Nov-2004 11:28 After: 30-Nov-2004 13:42

DUAL LATEROLOG - E Wellsite Calibration

DLT Electronics Calibration Plus Measurement

Phase	Deep Current Plus UA	Value
Before		341.2
After		341.3

317.5 (Minimum) 342.5 (Nominal) 367.5 (Maximum)

Phase	Deep Voltage Plus MV	Value
Before		10.91
After		10.91

9.830 (Minimum) 10.83 (Nominal) 11.83 (Maximum)

Phase	Groningen Voltage Plus MV	Value
Before		11.39
After		11.39

9.830 (Minimum) 10.83 (Nominal) 11.83 (Maximum)

Phase	Shallow Current Plus UA	Value
Before		344.1
After		344.1

317.5 (Minimum) 342.5 (Nominal) 367.5 (Maximum)

Phase	Shallow Voltage Plus MV	Value
Before		10.74
After		10.74

9.830 (Minimum) 10.83 (Nominal) 11.83 (Maximum)

Before: 30-Nov-2004 11:28 After: 30-Nov-2004 13:42

DUAL LATEROLOG - E Wellsite Calibration

DLT Electronics Calibration Zero Measurement

Phase	Deep Current Zero UA	Value
Before		-0.09865
After		0.02928

-1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)

Phase	Deep Voltage Zero MV	Value
Before		-0.008564
After		-0.007876

-0.1000 (Minimum) 0 (Nominal) 0.1000 (Maximum)

Phase	Groningen Voltage Zero MV	Value
Before		-0.004639
After		-0.001478

-0.1000 (Minimum) 0 (Nominal) 0.1000 (Maximum)

Phase	Shallow Current Zero UA	Value
Before		-0.09609
After		-0.009666

-1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)

Phase	Shallow Voltage Zero MV	Value
Before		-0.007672
After		-0.007697

-0.1000 (Minimum) 0 (Nominal) 0.1000 (Maximum)

Before: 30-Nov-2004 11:28 After: 30-Nov-2004 13:42

General Purpose Inclinometer / Equipment Identification

Primary Equipment:

GPIT Cartridge - A	GPIC - A	

Auxiliary Equipment:

GPIT Housing	GPIH - A	860

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:

Hostile Litho Density Sonde	HLDS - D	35
Hostile Litho Density High Voltage	HLDV - D	35
Gamma Source Radioactive	GSR - Z	2326

Auxiliary Equipment:

Hostile Litho Density Pad	HLDP - C	35
Hostile Litho Density High Voltage Housi	HEH - H	35

Hostile Litho-Density Sonde Wellsite Calibration

Background Measurement

Phase	SS Cs Resolution Bkg %	Value
Master		8.329
Before		8.426
After		8.459

7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)

Phase	LS Cs Resolution Bkg %	Value
Master		8.007
Before		8.060
After		7.996

7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)

Phase	LSW1 Background CPS	Value
Master		81.66
Before		82.11
After		81.22

55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)

Phase	LSW2 Background CPS	Value
Master		75.32
Before		75.20
After		75.00

50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)

Phase	LSW3 Background CPS	Value
Master		169.8
Before		170.1
After		168.3

110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)

Phase	LSW4 Background CPS	Value
Master		211.0
Before		209.7
After		207.7

140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)

Phase	LSW5 Background CPS	Value
Master		472.0
Before		471.9
After		469.2

330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)

Phase	SSW1 Background CPS	Value
Master		80.12
Before		79.12
After		79.65

55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)

Phase	SSW2 Background CPS	Value
Master		142.7
Before		141.7
After		141.2

100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)

Phase	SSW3 Background CPS	Value
Master		380.2
Before		379.4
After		377.2

280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)

Phase	SSW4 Background CPS	Value
Master		204.2
Before		202.5
After		203.3

150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)

Phase	SSW5 Background CPS	Value
Master		148.3
Before		149.0
After		147.2

110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)

Master: 30-Sep-2004 18:56 Before: 21-Nov-2004 14:36 After: 30-Nov-2004 13:49

Nuclear Porosity Lithology Cartridge - B / Equipment Identification

Primary Equipment:		
NPLC Cartridge	NPLC - B	79
Auxiliary Equipment:		
NPLC Housing	NPH - B	82

Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:		
Accelerator-Porosity Sonde	APS - C	202
APS Minitron	MNTR - F	5124
Auxiliary Equipment:		
Accelerator-Porosity Housing	APH - AC	104
APS Calibration Water Tank	SFT - 178	6250
APS Aluminum Calibrator Sleeve	SFT - 281	6250

Accelerator-Porosity Tool Wellsite Calibration

Detector Background

Phase	Near Det Bkg Cntrate CPS	Value
Master		25.75
Before		24.51
After		26.00

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Far Det Bkg Cntrate CPS	Value
Master		26.19
Before		26.56
After		25.99

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array-1 Det Bkg Cntrate CPS	Value
Master		28.51
Before		26.42
After		26.55

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Phase	Array-2 Det Bkg Cntrate CPS	Value
Master		25.90

Phase	Array Therm Det Bkg Cntrate CPS	Value
Master		26.41

Before		25.42
After		25.50

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Before		24.41
After		25.14

1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)

Master: 3-Oct-2004 23:49 Before: 21-Nov-2004 16:28 After: 30-Nov-2004 13:47

Accelerator-Porosity Tool Wellsite Calibration

Calibration Ratios

Phase	Near/Far Calibration Ratio	Value
Master		0.9637

0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)

Phase	Near/Array Calibration Ratio	Value
Master		0.9915

0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)

Phase	Near/Array Cal Ratio Up/Down	Value
Master		1.001

0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)

Master: 3-Oct-2004 23:49

Accelerator-Porosity Tool Wellsite Calibration

Tank Check

Phase	Array-1 Standoff Porosity PU	Value
Master		12.56

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Array-2 Standoff Porosity PU	Value
Master		12.06

9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)

Phase	Average Slowing Down Time US	Value
Master		5.739

5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)

Phase	Array-1 SDT Ratio Up/Down	Value
Master		1.010

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Array-2 SDT Ratio Up/Down	Value
Master		0.9869

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Phase	Sigma Formation CU	Value
Master		27.15

20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)

Master: 3-Oct-2004 23:49

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS - BA	77
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH - BA	79
Gamma Source Radioactive	GSR - U	135

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		40.65
Before		40.64
After		40.65

37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		16.58
Before		16.95
After		18.85

12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)

Phase	High Voltage V	Value
Master		1253
Before		1253
After		1256

900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)

Phase	Na 1785 Peak Loc	Value
Master		145.0
Before		145.4
After		145.8

135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		10.28
Before		9.865
After		10.74

7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)

Phase	Temperature DEGC	Value
Master		15.77
Before		15.80
After		25.90

-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)

Phase	Na Count Rate CPS	Value
Master		49.79
Before		50.40
After		47.07

10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)

Master: 1-Oct-2004 10:17 Before: 1-Oct-2004 10:23 After: 30-Nov-2004 13:49

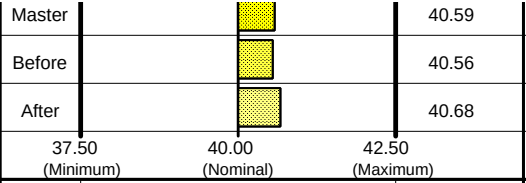
Hostile Natural Gamma Ray Sonde Wellsite Calibration

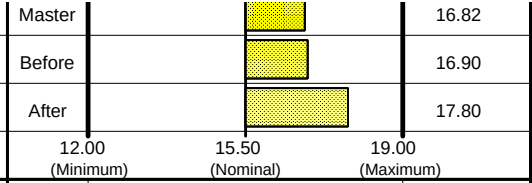
Detector 2 Check

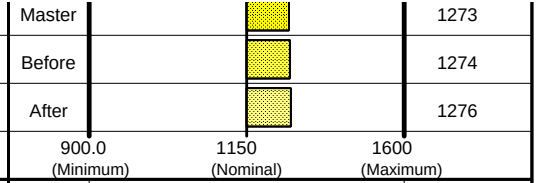
Phase	Na 511 Peak Loc	Value

Phase	Na 511 Peak Res %	Value

Phase	High Voltage V	Value







Phase	Na 1785 Peak Loc	Value
Master		144.9
Before		144.9
After		144.6

135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		10.50
Before		9.293
After		10.70

7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)

Phase	Temperature DEGC	Value
Master		14.93
Before		14.94
After		26.01

-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)

Phase	Na Count Rate CPS	Value
Master		49.97
Before		50.71
After		47.39

10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)

Master: 1-Oct-2004 10:17 Before: 1-Oct-2004 10:23 After: 30-Nov-2004 13:49

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9965
Before		0.9939
After		0.9932

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Master: 1-Oct-2004 10:17

Before: 1-Oct-2004 10:23

After: 30-Nov-2004 13:49

Company: Lamont Doherty

Schlumberger

Well: IODP EXP 304 Site 1309A

Field: Atlantis Massis

Country: Mid Atlantic Ridge

Ocean: Atlantic Ocean

Dual Laterlog