Schlumberger

Company: **Lamont Doherty Earth Observatory**

Well: **Expedition 346, Site U1430B**
Field: **Asian Monsoon**
Rig: **JOIDES Resolution** Country: **USA**

Rig: JOIDES Resolution
Field: Asian Monsoon
Location: Latitude: N 37* 54.1595'
Well: Expedition 346, Site U1430B
Company: Lamont Doherty Earth Observatory

HLDS Litho−Density

LOCATION

Latitude: N 37* 54.1595'
Longitude: E 131* 32.2499'

Elev.: K.B. −1082.90 m
G.L. 0.00 m
D.F. −1082.90 m

Permanent Datum: Sea Floor — Elev.: 0.00 m
Log Measured From: Drill Floor — −1082.90 m above Perm. Datum
Drilling Measured From: Drill Floor

Ocean: Pacific	Max. Well Deviation 0 deg	Longitude E 131.537*	Latitude N 37.903*

	Run 1	Run 2	Run 3
Logging Date	20−Sep−2013		
Run Number	1		
Depth Driller	275 m		
Schlumberger Depth	271.2 m		
Bottom Log Interval	264.4 m		
Top Log Interval	85 m		
Casing Driller Size @ Depth	5.500 in @ 79.5 m	@	@
Casing Schlumberger	79 m		
Bit Size	11.438 in		
Type Fluid In Hole	WBM		
MUD Density / Viscosity	1.26 g/cm3		
MUD Fluid Loss / PH			
MUD Source Of Sample	N/A		
RM @ Measured Temperature	@	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC	N/A / N/A		
RM @ MRT / RMF @ MRT	@ 15 / @ 15	@ / @	@ / @
Maximum Recorded Temperatures	15 degC		
Circulation Stopped / Time	20−Sep−2013 / 0:30		
Logger On Bottom / Time	20−Sep−2013 / 5:35		
Unit Number / Location	625003 / Houston		
Recorded By	C. Furman		
Witnessed By	J. Lofi		

	Run 1	Run 2	Run 3
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			

@ @ @ @ @ @

Run 3

Run 4

DISCLAIMER

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OTHER SERVICES1

OS1: HNGS
OS2: MSS
OS3: HRLA
OS4: DSI
OS5: FMS

REMARKS: RUN NUMBER 1

Hole drilled and cored using APC/XCB coring system.
LFV Actuator (Go−Devil) run attached to bottom of MSS for LFV locking open / closed.
Logs recorded from drill floor (1082.9m above permanent datum) then shifted to zero at sea floor.
Hole drilled with sea water and then displaced with weighted water−based mud having a density of 1.259 g/cc (10.5ppg).
Barite corrections applied to nuclear logs.
Caliper closed at 85mbsf to facilitate pipe entry; AHC not used due to very low heave.
Toolstring eccentered using MSS bowspring and HLDS Caliper.

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:		19C0−187	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 | RUN 2

SURFACE EQUIPMENT

GSR−U 616008
WITM (EDTS)−A

DOWNHOLE EQUIPMENT

LEH−MT 101
LEH−MT 101 101

18.43

MDSB_EDTC
Mud Tempe
17.47

EDTC−B
EDTH−B 8303

17.47

EDTC−B 8317
EDTG−A/B 8305

CTEM 16.40
Gamma Ray 15.83
EFTB DIAG
TelStatus
EDTCB Ele 15.49

HNGS−BA 15.49
HNGS−BA 194
HNSH−BA 205

Upper_1 14.79
Lower_2 14.58

HNGC−B 12.99
HNGH−A 115
HNGC−B 300

HNGC Stat 12.46

LDSC−B 11.92
LDSH−A 303
LDSC−B 326

LDSC Stat 11.39

HLDS 10.86
GSR−Z 8113
HLDV−D 35
HLDS−D 35
HEH−H 35
HLDP−C 35

Caliper
SS LS Status 6.80

AH−230 6.04

MSS_LDEO−A 5.64
ELIC−A 3
MSS_LDEO−A 3

Hi−Res 3.36

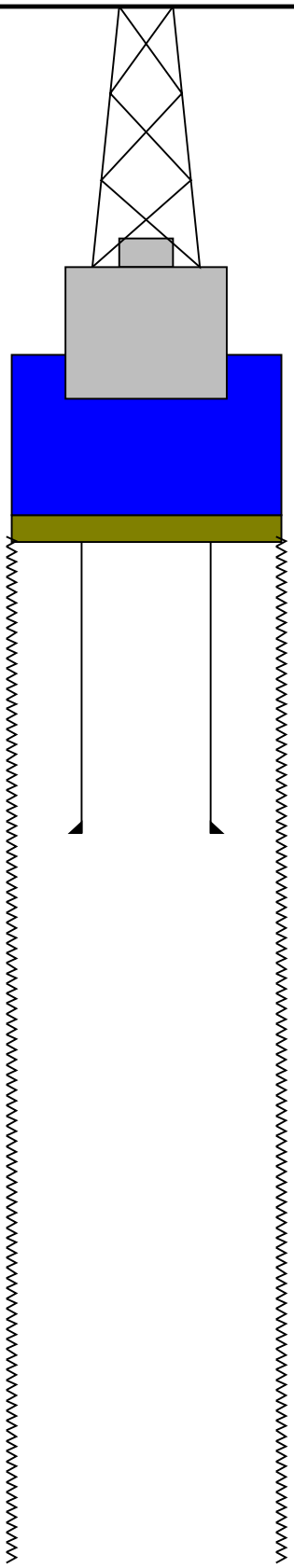
Dual Coil 0.39
DF ACCZ
Tension HV 0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 3.75 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Production String	(in) OD	(in) ID	(m) MD	Well Schematic	(m) MD	(in) OD	(in) ID	Casing String

	OD	ID	MD
Kelly Bushing Elevation			0.0
Derrick Floor Elevation			0.0
Mean Sea Level			11.0



MD	OD	ID	
1082.9	11.438	4.000	Sea Bed
1162.4	5.500	4.000	Bit
1357.9	11.438		TD – Driller

Schlumberger

Downlog
1:200 Scale

MAXIS Field Log

Company: Lamont Doherty Earth Observatory **Well: Expedition 346, Site U1430B**

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_LDL_027LUP		PRODUCER	21−Sep−2013 10:04	1337.1 M	1042.4 M

Output DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_030PUP	FN:32	PRODUCER	21−Sep−2013 10:08	254.5 M	−14.3 M
CLIENT	MSS_LDEO_LDL_NGS_030PUC	FN:33	CUSTOMER	21−Sep−2013 10:08	254.5 M	−14.3 M

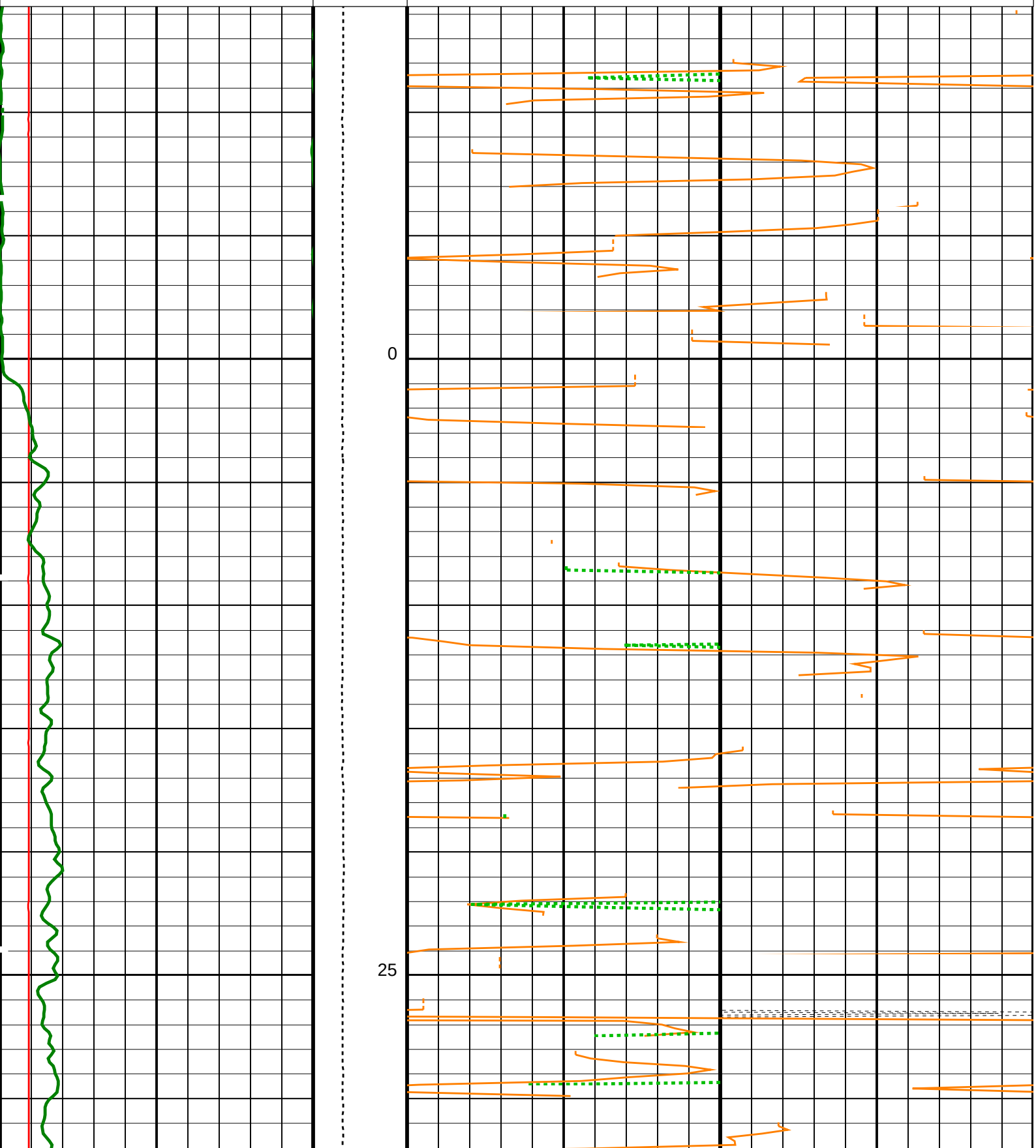
OP System Version: 19C0−187

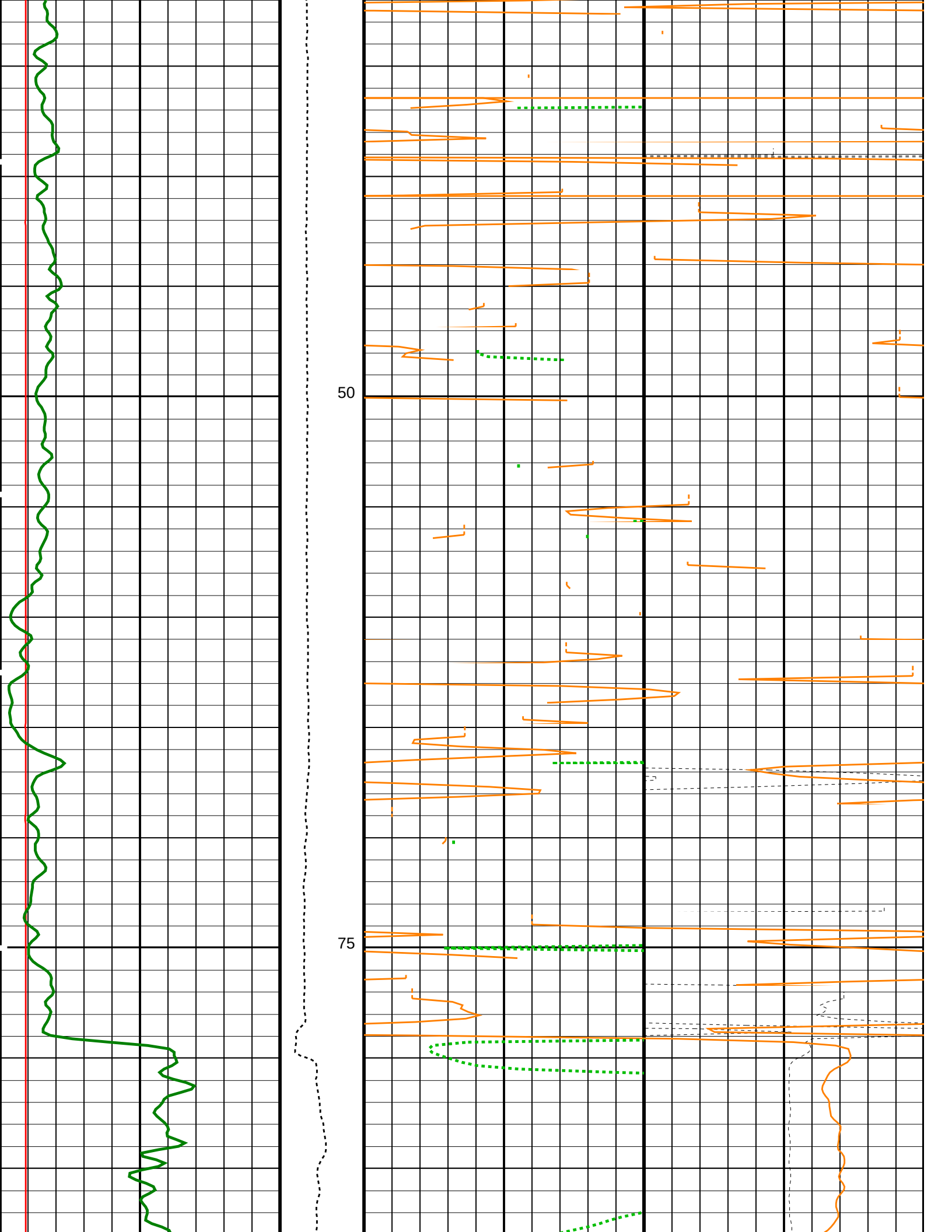
MSS_LDEO−A	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)		HLDS Long Spaced Photoelectric Effect (PEFL)	HLDS Bulk Density Correction (DRH)
0 (GAPI) 100		0 (----) 10	−0.25 (G/C3) 0.25
HLDS Caliper (LCAL)	**Tension (TENS) (LBF)**	**HLDS Bulk Density (RHOM)**	
0 (IN) 20	0 5000	3 (G/C3) 1	

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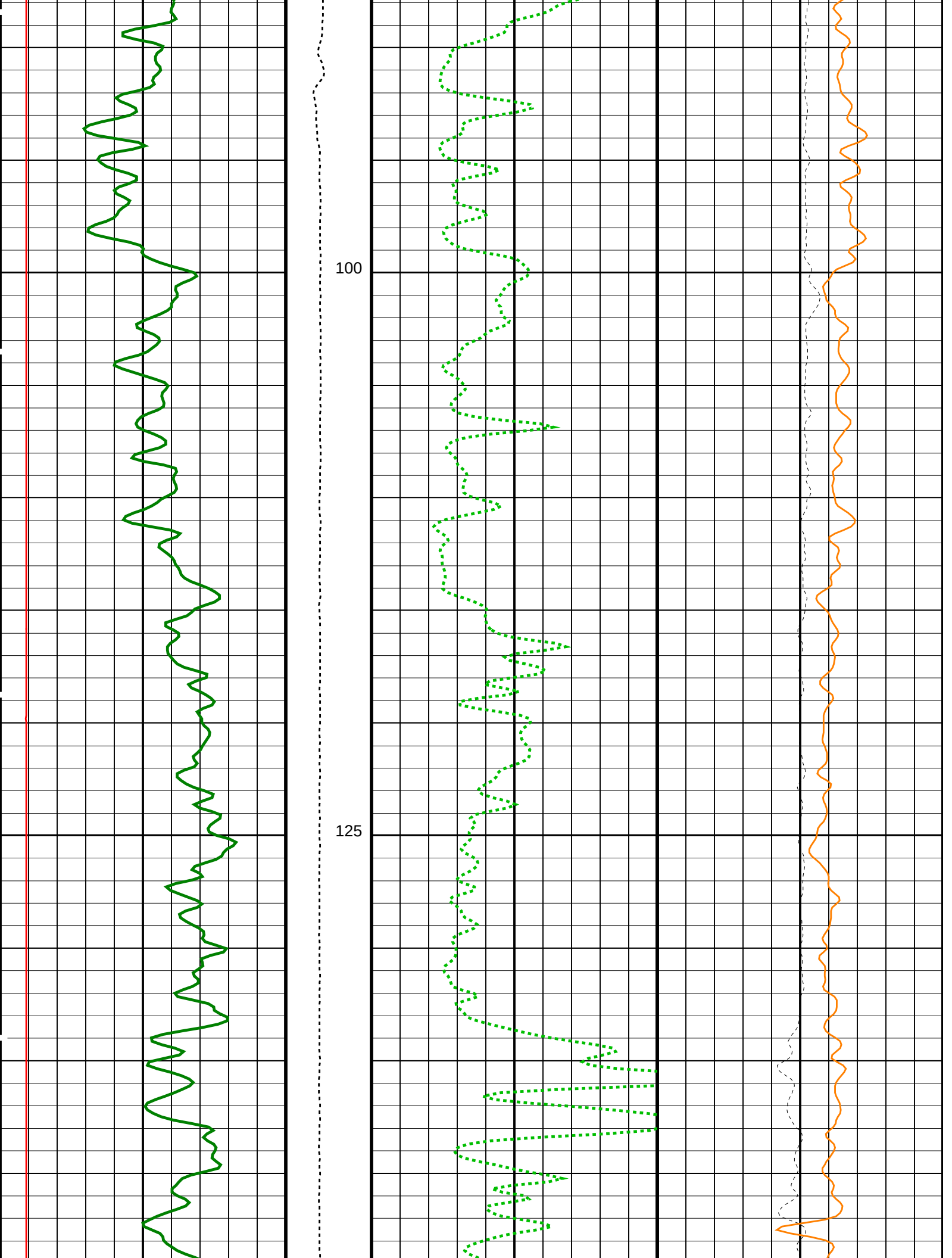
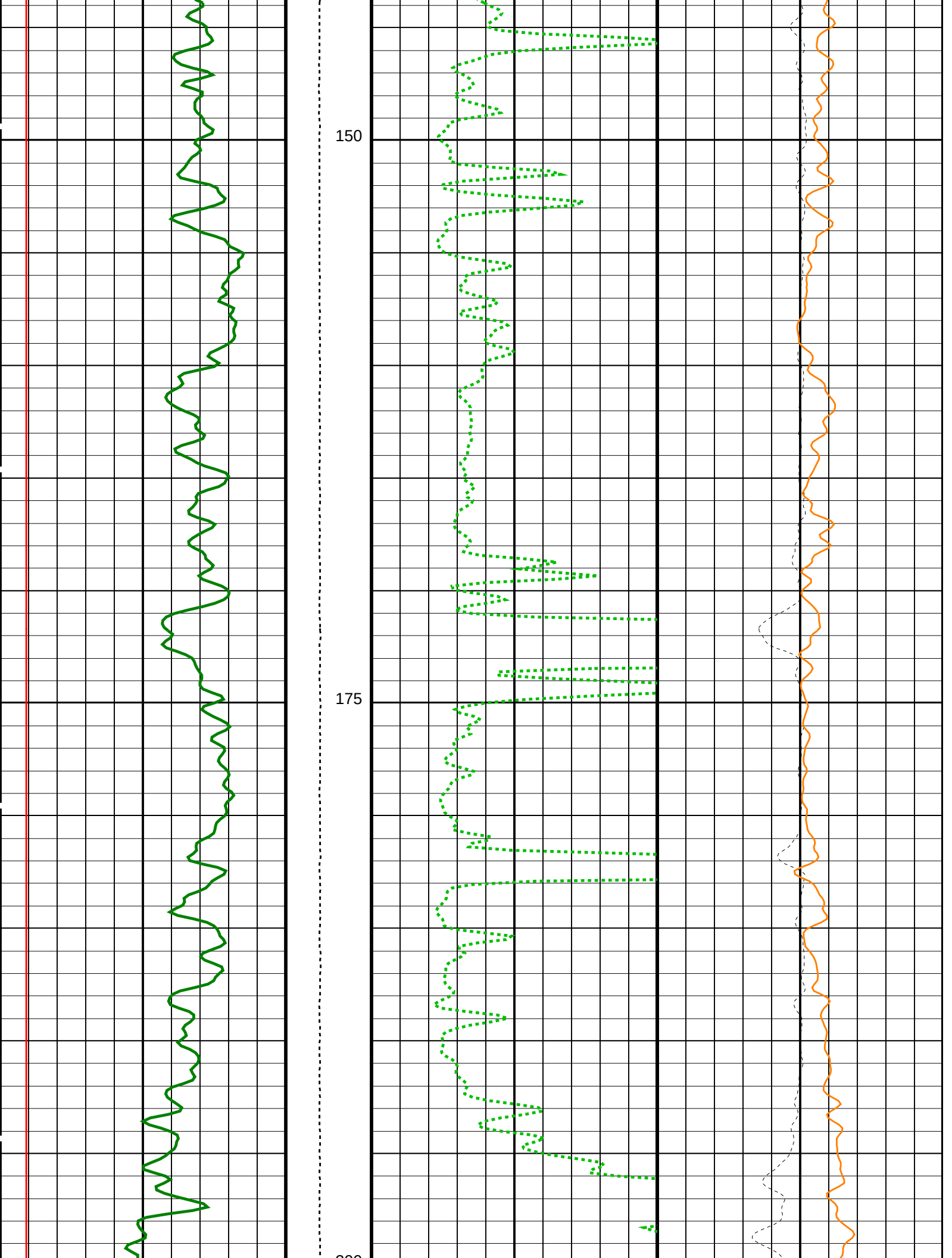
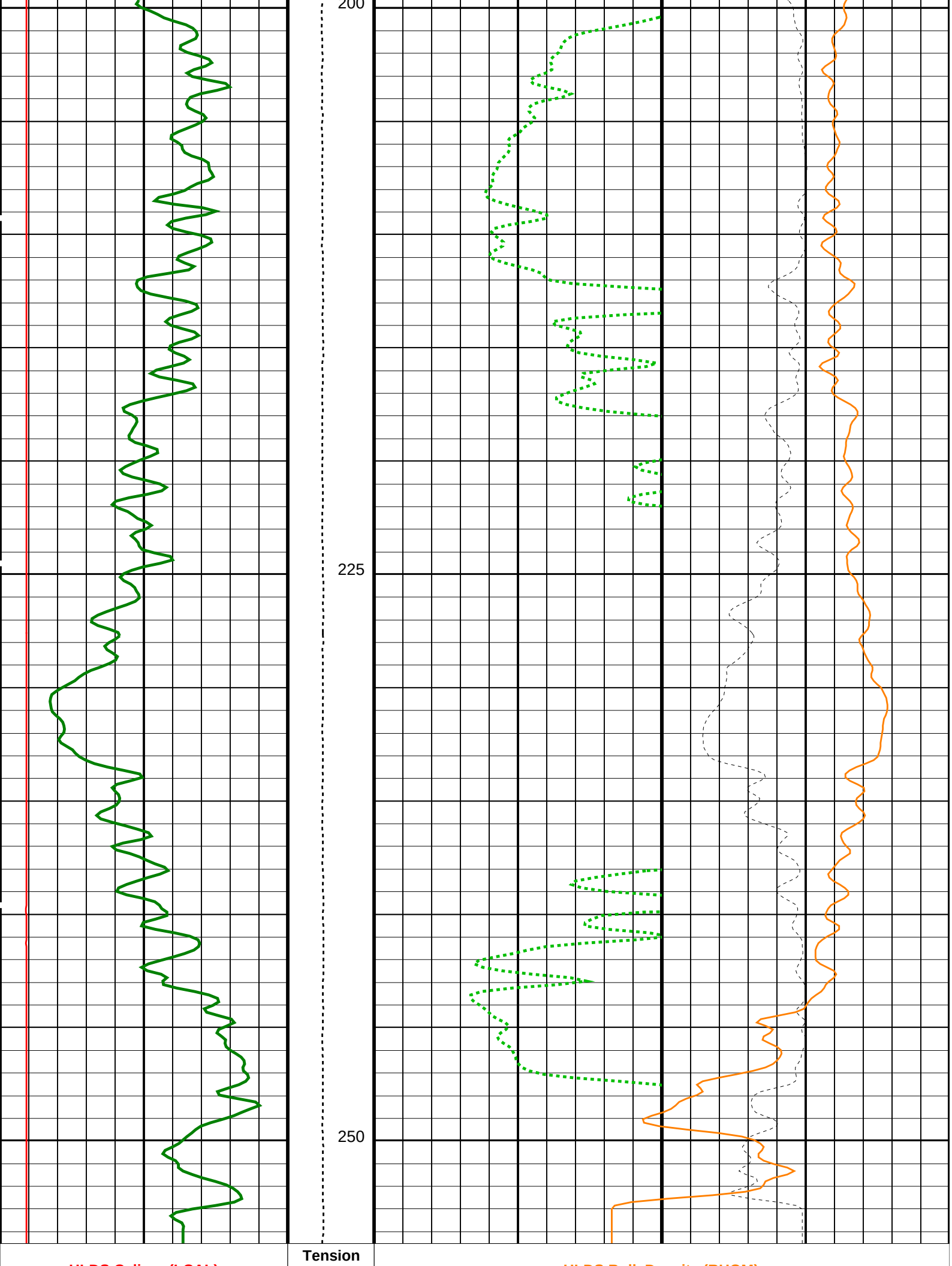

100
125


150
175


200
225
250
Tension

HLDS Caliper (LCAL)			(TENS)	HLDS Bulk Density (RHOM)	
0	(IN)	20	(LBF)	3 (G/C3)	1
			0 5000		

HNGS Spectroscopy Gamma Ray (HSGR)			HLDS Long Spaced Photoelectric Effect (PEFL)			HLDS Bulk Density Correction (DRH)		
0	(GAPI)	100	0	(----)	10	−0.25	(G/C3)	0.25

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HLDS: Hostile Litho−Density Sonde		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
MDEN	Matrix Density	2.71	G/C3
	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	−0.00965114	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
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	0.949952	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.95852	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
DPPM	Density Porosity Processing Mode	HIRS	
GCSE	Generalized Caliper Selection	BS	
	System and Miscellaneous		
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	−1082.5	M
PP	Playback Processing	NORMAL	

Format: HLDSDensityPE **Vertical Scale: 1:200** **Graphics File Created: 21−Sep−2013 10:08**

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_LDL_027LUP	PRODUCER	21−Sep−2013 10:04	1337.1 M	1042.4 M

Output DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_030PUP	FN:32	PRODUCER	21−Sep−2013 10:08
CLIENT	MSS_LDEO_LDL_NGS_030PUC	FN:33	CUSTOMER	21−Sep−2013 10:08

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Repeat Pass

Schlumberger

1:200 Scale

MAXIS Field Log

Company: Lamont Doherty Earth Observatory | **Well: Expedition 346, Site U1430B**

Input DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_006LUP	FN:5	PRODUCER	19−Sep−2013 20:18	1353.3 M	1274.5 M

Output DLIS Files

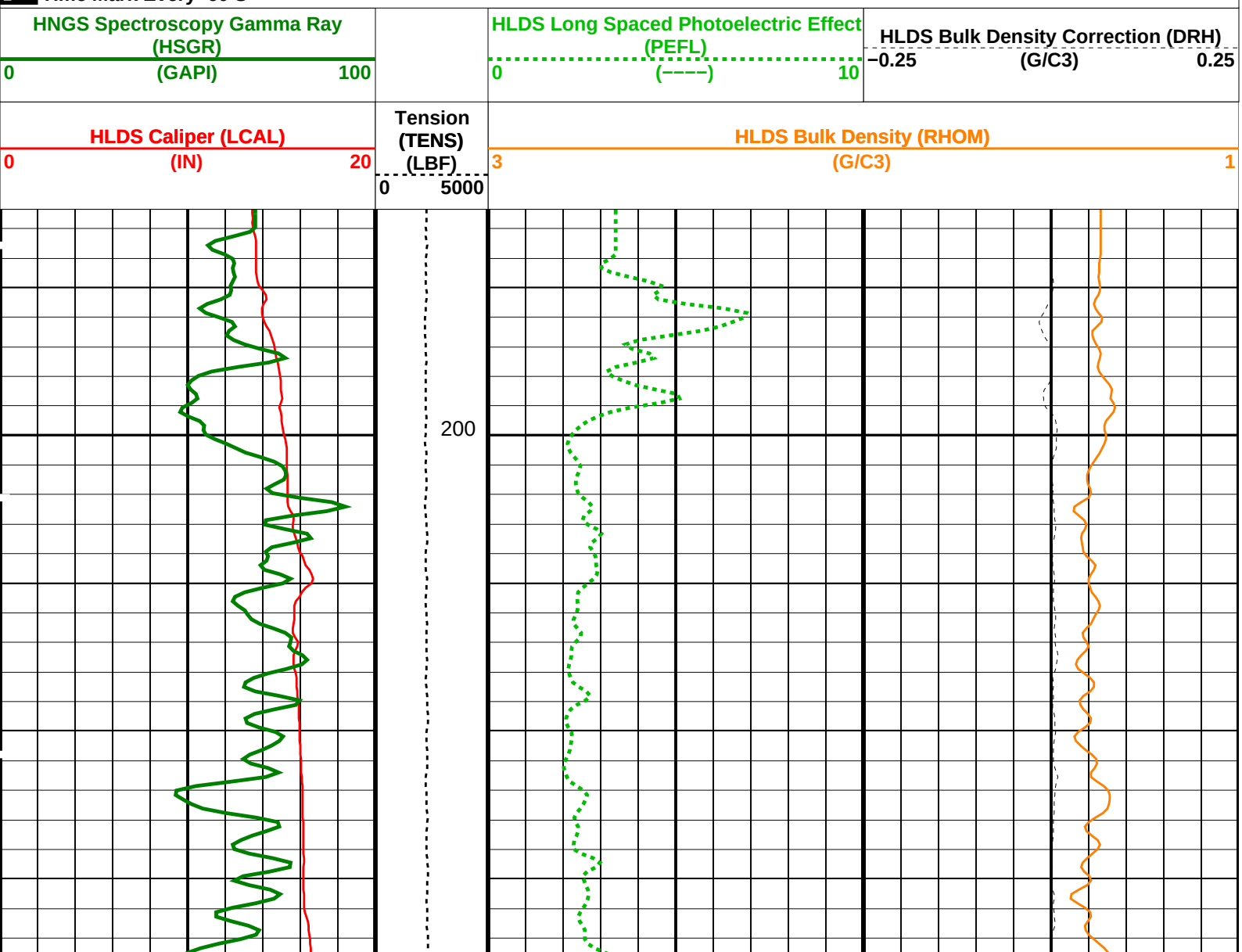
DEFAULT	MSS_LDEO_LDL_NGS_026PUP	FN:26	PRODUCER	21−Sep−2013 10:02	271.3 M	192.3 M
CLIENT	MSS_LDEO_LDL_NGS_026PUC	FN:27	CUSTOMER	21−Sep−2013 10:02	271.3 M	192.3 M

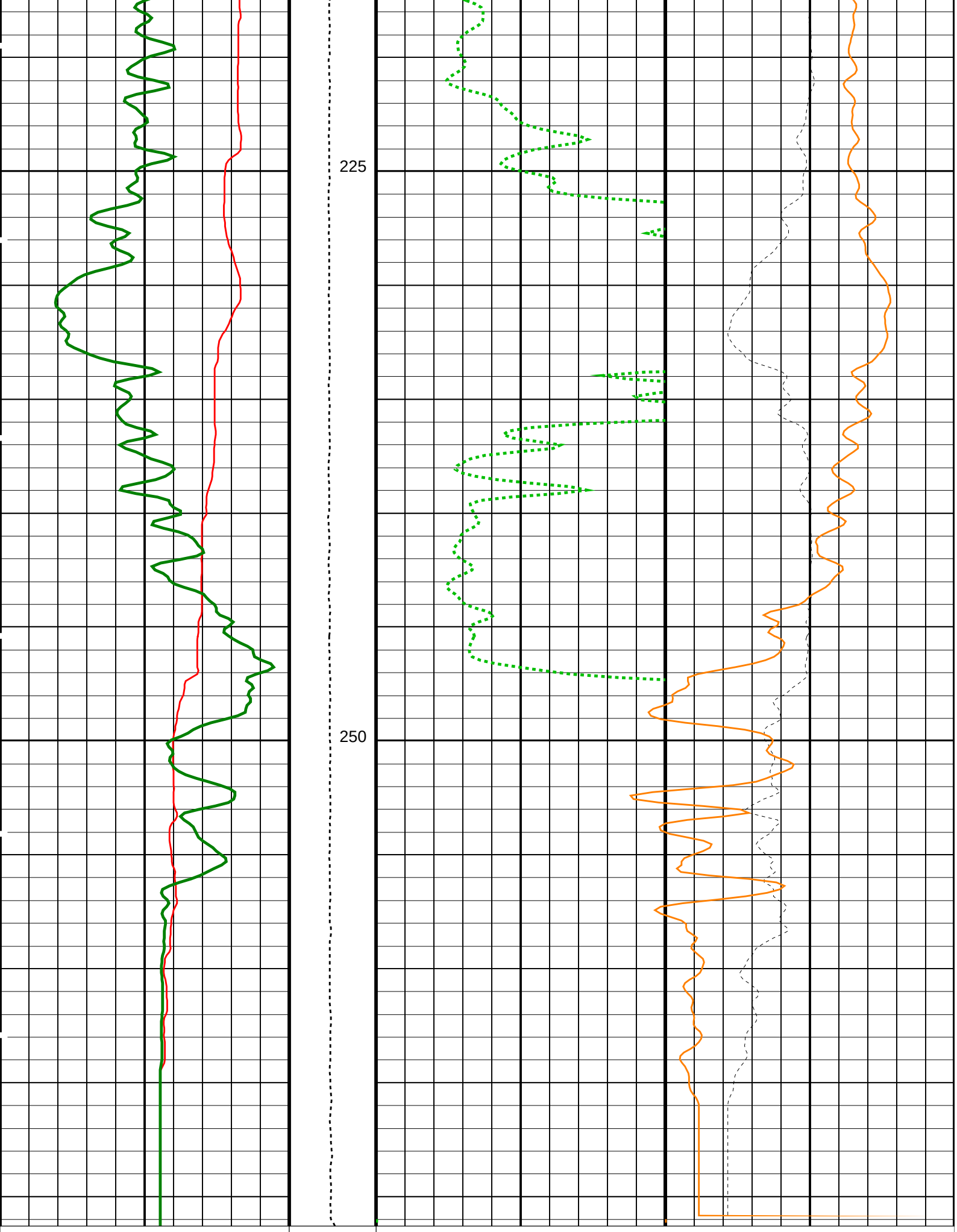
OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S




225
250
HLDS Caliper (LCAL)
0
(IN)
20
Tension
(TENS)
(LBF)
HLDS Bulk Density (RHOM)
3
(G/C3)
1

0 (IN) 20		0 (LBF) 5000	3 (G/C3) 1		
HNGS Spectroscopy Gamma Ray (HSGR)			HLDS Long Spaced Photoelectric Effect (PEFL)		HLDS Bulk Density Correction (DRH)
0 (GAPI) 100			0 (----) 10		−0.25 (G/C3) 0.25

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HLDS: Hostile Litho−Density Sonde		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
MDEN	Matrix Density	2.71	G/C3
	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	−0.00965114	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
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	0.949952	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.95852	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
DPPM	Density Porosity Processing Mode	HIRS	
GCSE	Generalized Caliper Selection	LCAL	
	System and Miscellaneous		
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	−1082.2	M
PP	Playback Processing	NORMAL	

Format: HLDSDensityPE Vertical Scale: 1:200 Graphics File Created: 21−Sep−2013 10:02

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_006LUP	FN:5	PRODUCER	19−Sep−2013 20:18	1353.3 M	1274.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_026PUP	FN:26	PRODUCER	21−Sep−2013 10:02
CLIENT	MSS_LDEO_LDL_NGS_026PUC	FN:27	CUSTOMER	21−Sep−2013 10:02

Schlumberger

Main Pass
1:200 Scale

1:200 Scale

MAXIS Field Log

Company: Lamont Doherty Earth Observatory | Well: Expedition 346, Site U1430B

Input DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_007LUP	FN:6	PRODUCER	19−Sep−2013 20:35	1353.3 M	1074.6 M

Output DLIS Files

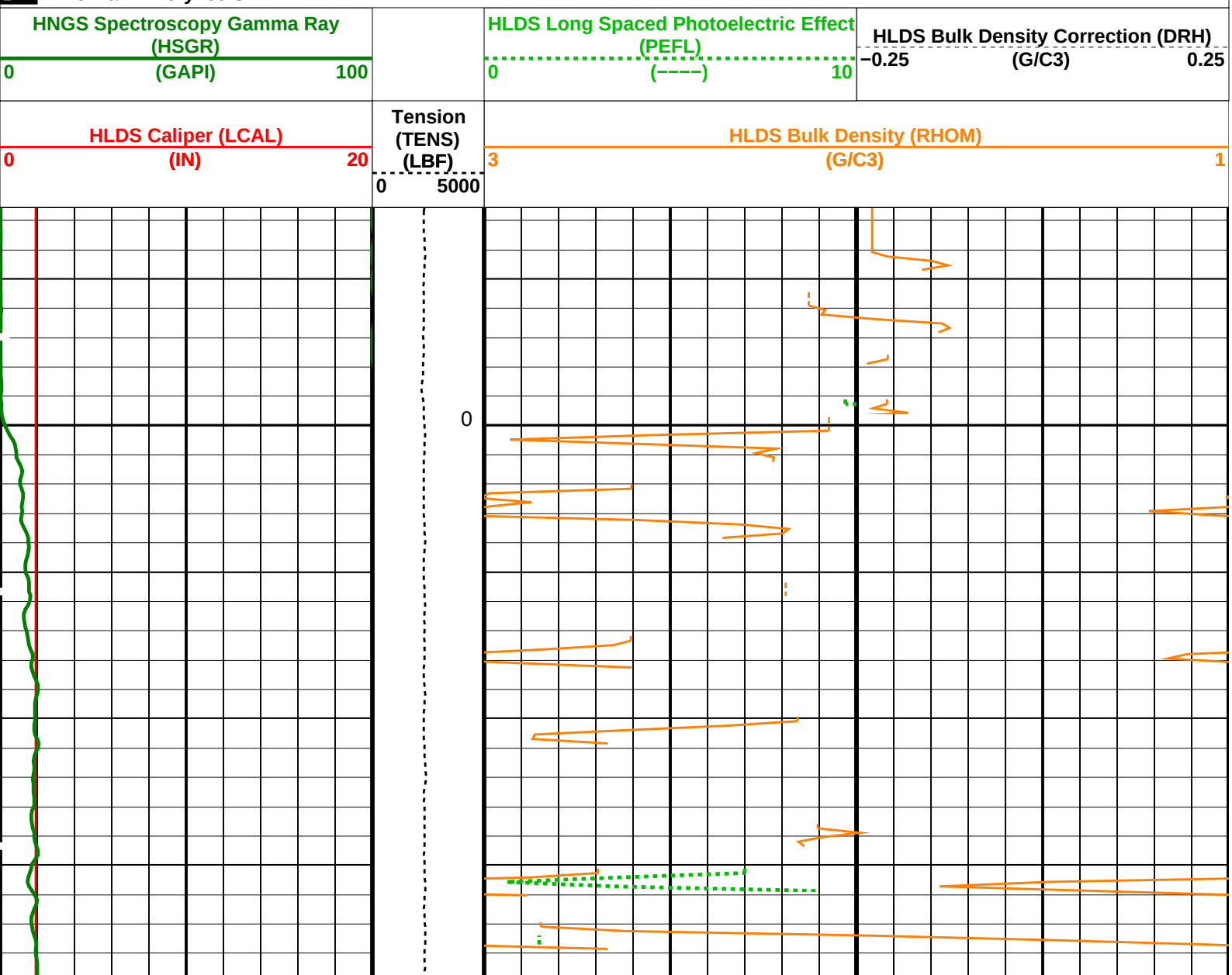
DEFAULT	MSS_LDEO_LDL_NGS_025PUP	FN:24	PRODUCER	21−Sep−2013 09:57	271.3 M	−7.5 M
CLIENT	MSS_LDEO_LDL_NGS_025PUC	FN:25	CUSTOMER	21−Sep−2013 09:57	271.3 M	−7.5 M

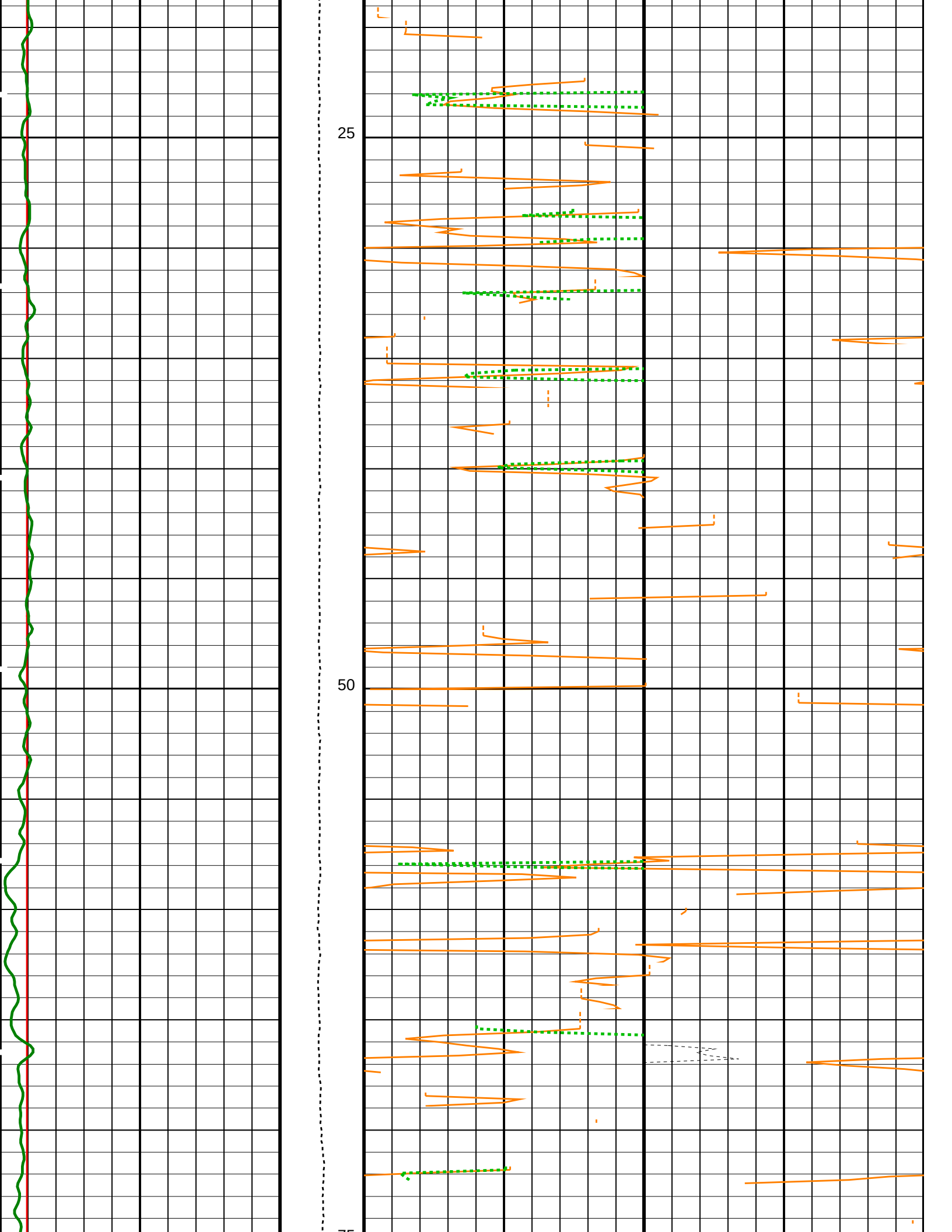
OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

PIP SUMMARY

Time Mark Every 60 S

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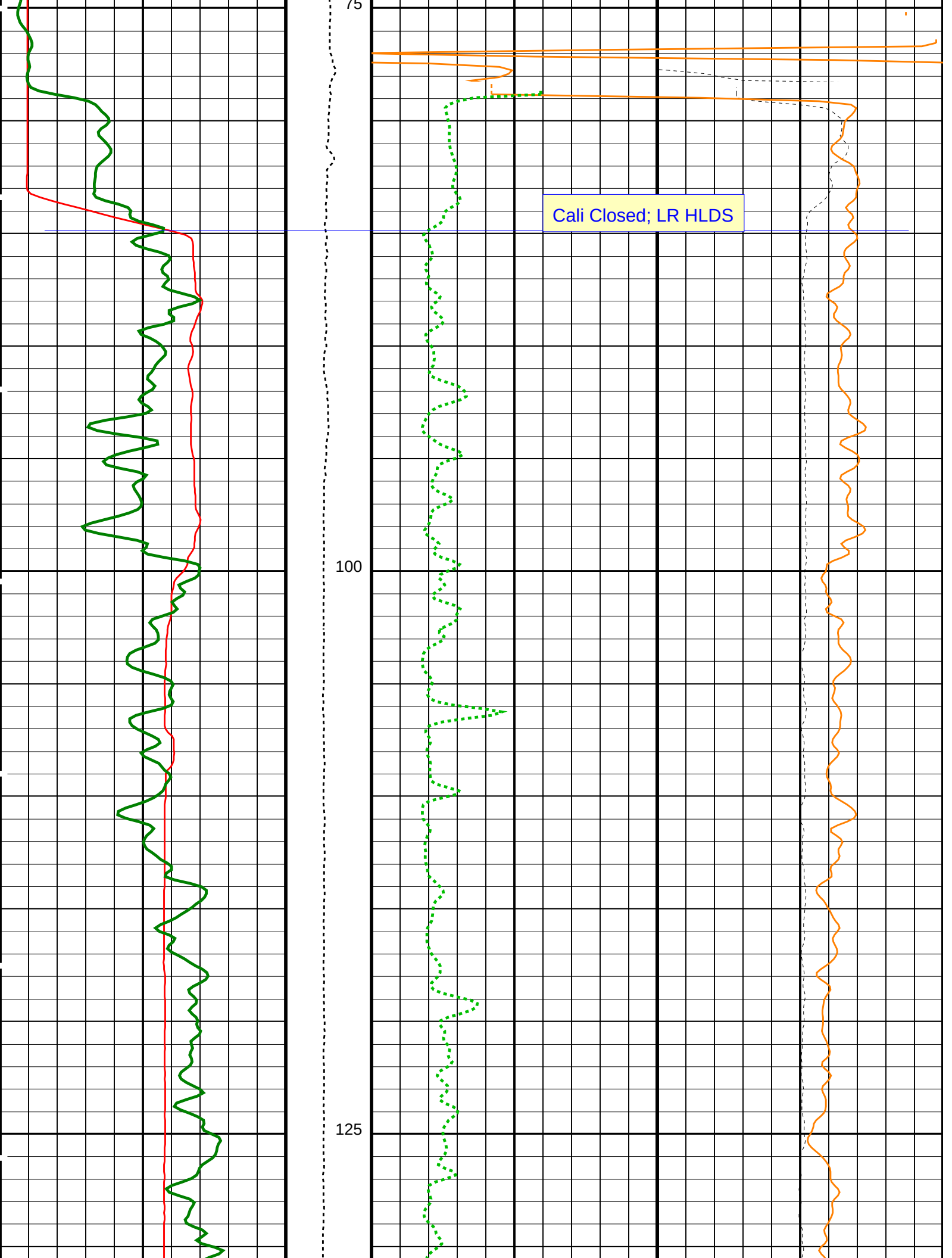
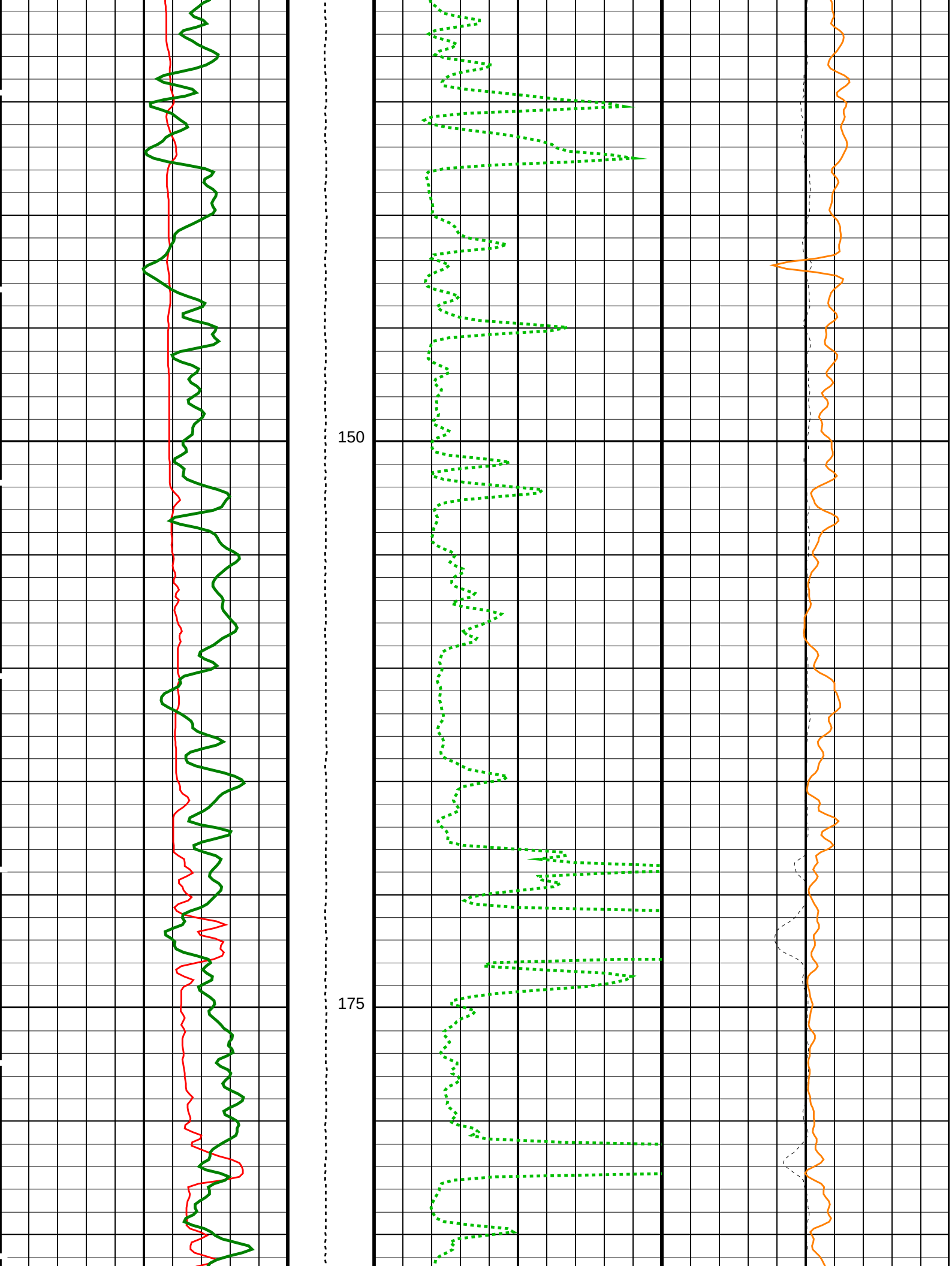

75
Cali Closed; LR HLDS
100
125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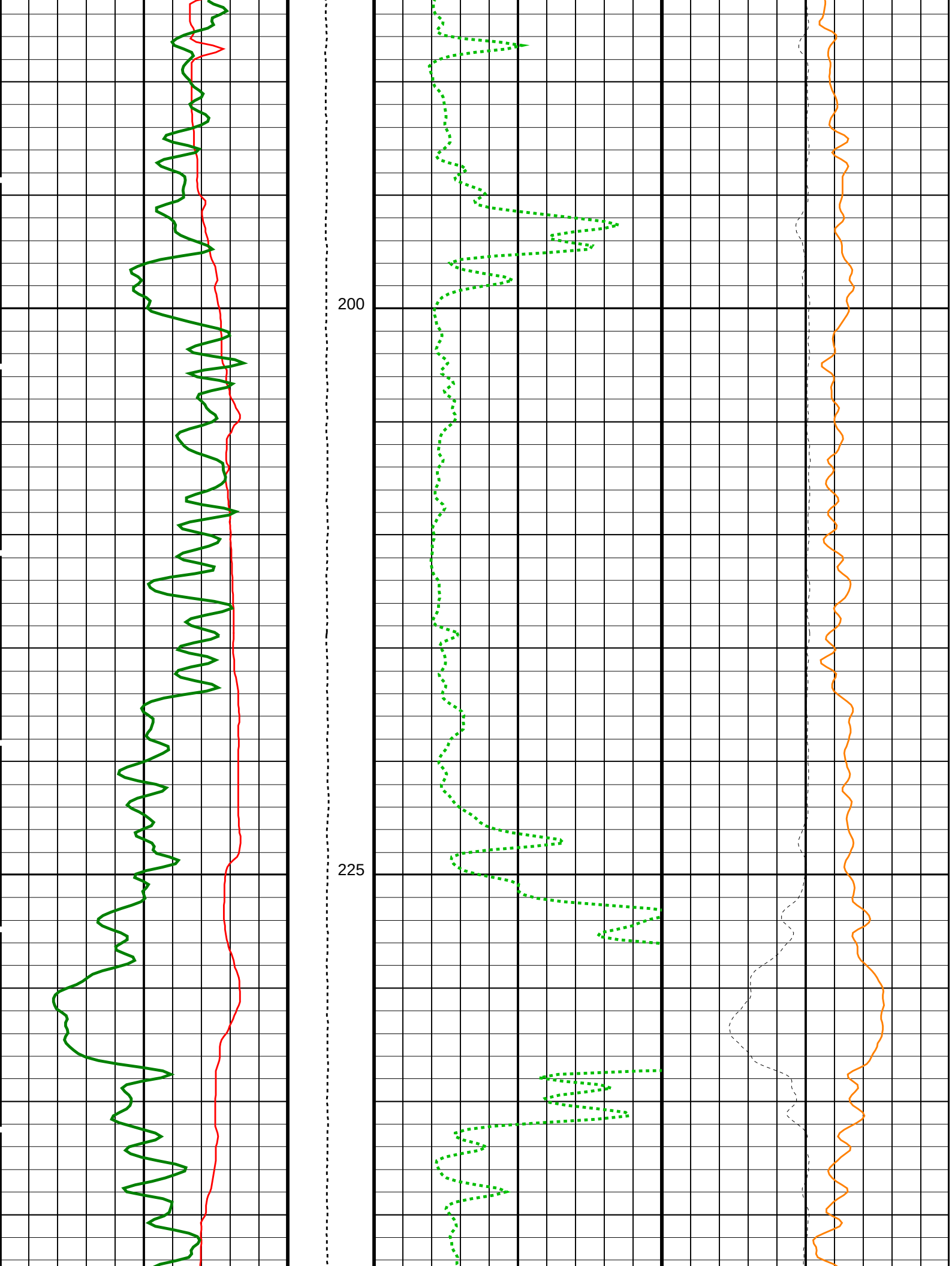
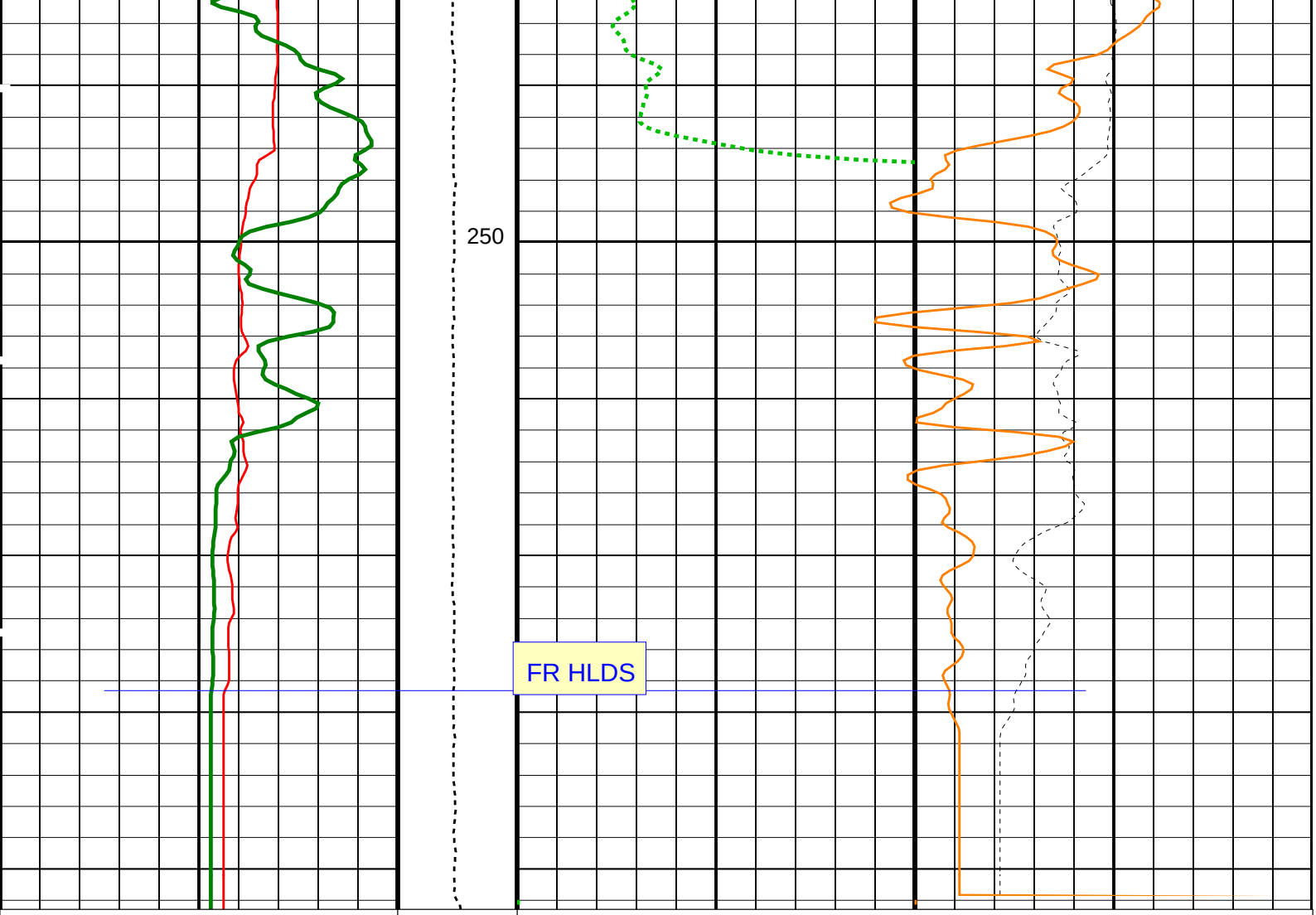

200
225



HLDS Caliper (LCAL)	Tension (TENS)	HLDS Bulk Density (RHOM)
0 (IN) 20	0 5000 (LBF)	3 (G/C3) 1

HNGS Spectroscopy Gamma Ray (HSGR)		HLDS Long Spaced Photoelectric Effect (PEFL)	HLDS Bulk Density Correction (DRH)
0 (GAPI) 100		0 (−−−−) 10	−0.25 (G/C3) 0.25

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HLDS: Hostile Litho−Density Sonde		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
MDEN	Matrix Density	2.71	G/C3
	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	−0.00965114	
HALF	HNGS Alpha Filter Length	60	IN
HCPB	HNGS Apply Borehole Potassium Correction	NONE	

HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
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	0.949952	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.95852	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
DPPM	Density Porosity Processing Mode	HIRS	
GCSE	Generalized Caliper Selection	LCAL	
	System and Miscellaneous		
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	−1082.2	M
PP	Playback Processing	NORMAL	

Format: HLDSDensityPE **Vertical Scale: 1:200** **Graphics File Created: 21−Sep−2013 09:57**

OP System Version: 19C0−187

MSS_LDEO−A	19C0−187	HLDS	19C0−187
LDSC−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	SKK−5169−EDTCB

Input DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_007LUP	FN:6	PRODUCER	19−Sep−2013 20:35	1353.3 M	1074.6 M

Output DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_025PUP	FN:24	PRODUCER	21−Sep−2013 09:57
CLIENT	MSS_LDEO_LDL_NGS_025PUC	FN:25	CUSTOMER	21−Sep−2013 09:57

Schlumberger

Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Litho−Density Sonde Wellsite Calibration − Background Measurement							
Master: 29−Jul−2013 0:00 Before: 19−Sep−2013 18:17 After: 19−Sep−2013 22:01							
SS Cs Resolution Bkg	9.000	7.700	7.741	7.693	−0.04790	1.800	%
LS Cs Resolution Bkg	9.000	7.970	8.042	7.921	−0.1211	1.800	%
LSW1 Background	100.0	84.57	83.51	84.56	1.048	3.000	CPS
LSW2 Background	100.0	75.61	76.23	76.52	0.2828	3.000	CPS
LSW3 Background	200.0	173.3	174.7	173.9	−0.8438	6.000	CPS
LSW4 Background	250.0	214.7	214.1	212.4	−1.666	7.500	CPS
LSW5 Background	600.0	499.6	502.6	499.9	−2.670	18.00	CPS
SSW1 Background	100.0	82.62	82.43	81.52	−0.9109	3.000	CPS
SSW2 Background	200.0	142.8	141.6	143.5	1.887	6.000	CPS
SSW3 Background	500.0	395.0	395.5	393.9	−1.621	15.00	CPS
SSW4 Background	270.0	213.9	211.0	212.8	1.786	8.100	CPS
SSW5 Background	200.0	151.4	151.4	150.6	−0.8012	6.000	CPS
Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement							
Master: 29−Jul−2013 3:09							
LSW1 Aluminum	600.0	491.6	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	715.0	N/A	N/A	N/A	N/A	CPS

LSW3 Aluminum	1100	869.1	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	437.9	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	399.4	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2277	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6290	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	8825	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3653	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	439.8	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement
Master: 29−Jul−2013 3:02

LSW1 Iron	400.0	337.2	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	576.3	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	764.7	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	394.4	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	366.6	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1667	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5226	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8022	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3308	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	389.3	N/A	N/A	N/A	N/A	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration
Before: 29−Jul−2013 5:20

HLDS Caliper Small Ring	12.00	N/A	14.88	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	18.44	N/A	N/A	N/A	IN

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check
Master: 29−Jul−2013 20:46 Before: 19−Sep−2013 18:19 After: 19−Sep−2013 22:02

Na 511 Peak Loc	40.00	39.74	39.66	39.56	−0.09800	1.000	
Na 511 Peak Res	15.50	15.31	15.17	16.33	1.168	2.000	%
High Voltage	1150	1168	1176	1177	0.3591	N/A	V
Na 1785 Peak Loc	142.6	142.6	142.6	141.8	−0.8471	7.000	
Na 1785 Peak Res	8.500	9.002	8.753	9.095	0.3424	2.000	%
Temperature	15.50	21.46	30.57	29.49	−1.081	N/A	DEGC
Na Count Rate	45.00	15.10	13.57	12.85	−0.7143	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check
Master: 29−Jul−2013 20:46 Before: 19−Sep−2013 18:19 After: 19−Sep−2013 22:02

Na 511 Peak Loc	40.00	39.58	39.77	39.66	−0.1100	1.000	
Na 511 Peak Res	15.50	16.04	16.03	15.80	−0.2308	2.000	%
High Voltage	1150	1093	1110	1111	1.164	N/A	V
Na 1785 Peak Loc	142.6	141.7	140.4	142.4	2.014	7.000	
Na 1785 Peak Res	8.500	9.499	9.518	8.749	−0.7685	2.000	%
Temperature	15.50	21.65	31.21	31.20	−0.01138	N/A	DEGC
Na Count Rate	45.00	14.93	13.61	12.82	−0.7925	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2
Master: 29−Jul−2013 20:46 Before: 19−Sep−2013 18:19 After: 19−Sep−2013 22:02

Coincidence Count Rate Ratio	1.000	1.015	0.9964	1.002	0.005705	0.05000	

Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration
Before: 19−Sep−2013 18:19

EDTC Z−Axis Acceleration	9.810	N/A	9.759	N/A	N/A	N/A	M/S2

Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration
Before: 19−Sep−2013 18:15 After: 19−Sep−2013 21:58

Gamma Ray (Jig − Bkg)	154.9	N/A	154.9	157.4	2.498	14.08	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	167.7	2.660	15.00	GAPI

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	8113

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	Phase	LS Cs Resolution Bkg %	Value	Phase	LSW1 Background CPS	Value
Master		7.700	Master		7.970	Master		84.57

Phase	LSW1 Background CPS	Value
Master		7.741
Before		7.741
After		7.693
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		8.042
Before		8.042
After		7.921
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		83.51
Before		83.51
After		84.56
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		75.61
Before		76.23
After		76.52
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		173.3
Before		174.7
After		173.9
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		214.7
Before		214.1
After		212.4
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		499.6
Before		502.6
After		499.9
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		82.62
Before		82.43
After		81.52
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	SSW4 Background CPS	Value
Master		142.8
Before		141.6
After		143.5
	100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)	

Phase	SSW5 Background CPS	Value
Master		395.0
Before		395.5
After		393.9
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	

Phase	SSW6 Background CPS	Value
Master		213.9
Before		211.0
After		212.8
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)	

Phase	SSW7 Background CPS	Value
Master		151.4
Before		151.4
After		150.6
	110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)	

Master: 29−Jul−2013 0:00 Before: 19−Sep−2013 18:17 After: 19−Sep−2013 22:01

Litho−Density Spectroscopy Cartridge − B / Equipment Identification

Primary Equipment:		
LDSC Cartridge	LDSC − B	326
Auxiliary Equipment:		
LDSC Housing	LDSH − A	303

Hostile Natural Gamma Ray Cartridge − B / Equipment Identification

Primary Equipment:		
HNGC Cartridge	HNGC − B	300
Auxiliary Equipment:		
HNGC Housing	HNGH − A	115

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS − BA	194
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH − BA	205
Gamma Source Radioactive	GSR − U	616008

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		39.74
Before		39.66
After		39.56
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		15.31
Before		15.17
After		16.33
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1168
Before		1176
After		1177
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		

Phase	Na 1785 Peak Res %	Value
Master		

Phase	Temperature DEGC	Value
Master		

Phase	Na 511 Peak Loc	Value
Master		142.6
Before		142.6
After		141.8

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

Phase	Na 511 Peak Res %	Value
Master		9.002
Before		8.753
After		9.095

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

Phase	High Voltage V	Value
Master		21.46
Before		30.57
After		29.49

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

Phase	Na Count Rate CPS	Value
Master		15.10
Before		13.57
After		12.85

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

Master: 29−Jul−2013 20:46 Before: 19−Sep−2013 18:19 After: 19−Sep−2013 22:02

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.58
Before		39.77
After		39.66

37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		16.04
Before		16.03
After		15.80

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

Phase	High Voltage V	Value
Master		1093
Before		1110
After		1111

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

Phase	Na 1785 Peak Loc	Value
Master		141.7
Before		140.4
After		142.4

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

Phase	Na 1785 Peak Res %	Value
Master		9.499
Before		9.518
After		8.749

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

Phase	Temperature DEGC	Value
Master		21.65
Before		31.21
After		31.20

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

Phase	Na Count Rate CPS	Value
Master		14.93
Before		13.61
After		12.82

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

Master: 29−Jul−2013 20:46 Before: 19−Sep−2013 18:19 After: 19−Sep−2013 22:02

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		1.015
Before		0.9964
After		1.002

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

Master: 29−Jul−2013 20:46
Before: 19−Sep−2013 18:19
After: 19−Sep−2013 22:02

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:

EDTC Gamma Ray Detector	EDTG − A/B	8305
Enhanced DTS Cartridge	EDTC − B	8317

Auxiliary Equipment:

EDTC Housing	EDTH − B	8303

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

Phase	EDTC Z−Axis Acceleration M/S2	Value

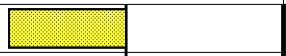
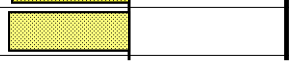
Before		9.759

9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)

Before: 19−Sep−2013 18:19

Enhanced DTS Cartridge Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value
Before		7.622
After		7.111

0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)

Phase	Gamma Ray (Jig − Bkg) GAPI	Value
Before		154.9
After		157.4

140.8 (Minimum)	154.9 (Nominal)	169.0 (Maximum)

Phase	Gamma Ray (Calibrated) GAPI	Value
Before		165.0
After		167.7

150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)

Before: 19−Sep−2013 18:15 After: 19−Sep−2013 21:58

Company: **Lamont Doherty Earth Observatory**

Schlumberger

Well: **Expedition 346, Site U1430B**
Field: **Asian Monsoon**
Rig: **JOIDES Resolution**
Country: **USA**

HLDS Litho−Density