Schlumberger

Company: **Lamont Doherty**

Well: **Expedition 327 Site U1362A**
Field: **Juan de Fuca**
Rig: **JOIDES Resolution** Country: **USA**

Litho−Density (HLDS)

Rig: JOIDES Resolution
Field: Juan de Fuca
Location: Latitude: N 47* 45.499'
Well: Expedition 327 Site U1362A
Company: Lamont Doherty

LOCATION

Latitude: N 47* 45.499'
Longitude: W 127* 45.752'

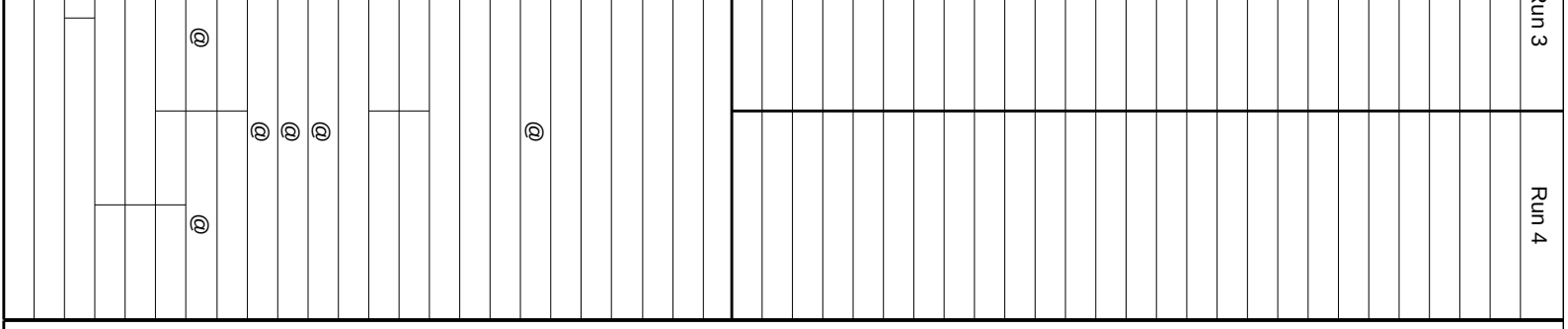
Elev.: K.B. 2672.00 m
G.L. 0.00 m
D.F. 2672.00 m

Permanent Datum: Sea Floor — Elev.: 0.00 m
Log Measured From: Drill Floor — 2672.00 m above Perm. Datum
Drilling Measured From: Drill Floor

Ocean:	Max. Well Deviation	Longitude	Latitude
Pacific	0 deg	N 47* 45.499'	W 127* 45.752'

	Run 1	Run 2	R
Logging Date	12−Aug−2010		
Run Number	1		
Depth Driller	3200 m		
Schlumberger Depth	3179 m		
Bottom Log Interval	3163 m		
Top Log Interval	2980.5 m		
Casing Driller Size @ Depth	10.750 in @ 2980.5 m	@	
Casing Schlumberger	2980.5 m		
Bit Size	9.875 in		
Type Fluid In Hole	Seawater		
MUD Density / Viscosity	1.03 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	1−Jan−2010 / 23:00		
Logger On Bottom / Time	12−Aug−2010 / 8:30		
Unit Number / Location	625003 / Houston		
Recorded By	C. Furman		
Witnessed By	S. Mrozewski		

	Run 1	Run 2	R
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

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OTHER SERVICES1

OS1: HNGS

OS2: UBI

OS3: MTT

REMARKS: RUN NUMBER 1

Logs run in first hole ("A" hole) of drilling site U1362 for the primary purpose of evaluating borehole condition in preparation to set a drilling packer for a formation injectivity test.

All logs recorded depth measured from drill floor and adjusted to match driller's casing shoe

Logging tools stopped at a maximum depth of 3179mbrf to maintain a safe margin above the latest fill level, 3184mbrf.

Caliper tip found broken upon return to surface; logs played back with offset to caliper calibration to match casing ID.

Density run in standard resolution mode; data affected by borehole condition in some areas.

Casing ID was 10.05" in the 10−3/4" casing below drill pipe.

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:		17C0−154	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

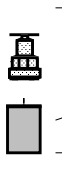
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

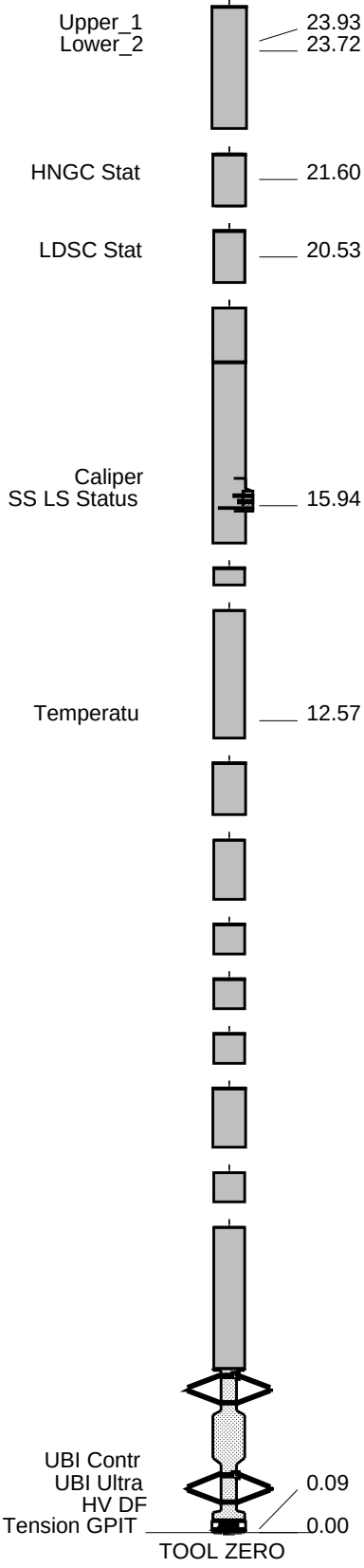
SURFACE EQUIPMENT

GSR−U 616008
WITM (DTS)−A

DOWNHOLE EQUIPMENT



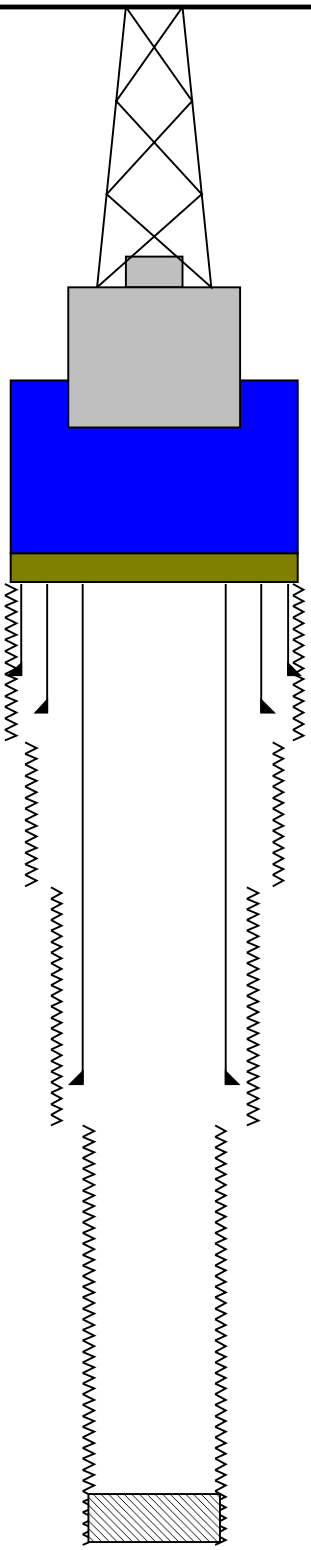
BSP	SP SPARC	26.44	26.44
LEH−QT			26.44
LEH−QT 301			
DTC−H	CTEM	25.27	25.55
ECH−KC	TelStatus		
	ToolStatu	24.63	



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			11.0
Derrick Floor Elevation			11.0
Mean Sea Level			0.0



MD	OD	ID	
2672.0			Sea Bed
2725.0	20.000		Casing Shoe
2902.0	16.000		Casing Shoe
2907.7	21.500		Borehole Segment Bottom
2914.0	18.500		Borehole Segment Bottom
2980.5	10.750		Casing Shoe
3018.0	14.750		Borehole Segment Bottom
3184.0			Fill Identified by Last Wiper Trip
3200.0	9.875		Driller's Total Depth

Schlumberger

First Pass
1:200 Scale

MAXIS Field Log

Input DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_014LUP	FN:13	PRODUCER	12−Aug−2010 08:32	3177.5 M	2943.8 M

Output DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_037PUP	FN:36	PRODUCER	12−Aug−2010 21:36	3179.8 M	2946.2 M

OP System Version: 17C0−154

UBI−D	SRPC−3971−Q1_2010_OP17	GPIT−A/B	SRPC−3971−Q1_2010_OP17
DTA−A	17C0−154	MTT_LDEO−A	17C0−154
HLDS	SPC−3961−OP17_NUCL	LDSC−B	SPC−3961−OP17_NUCL
HNGC−B	SPC−3961−OP17_NUCL	HNGS−BA	SPC−3961−OP17_NUCL
DTC−H	17C0−154	BSP	17C0−154

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 30

HLDS Caliper (LCAL)
0 (IN) 20

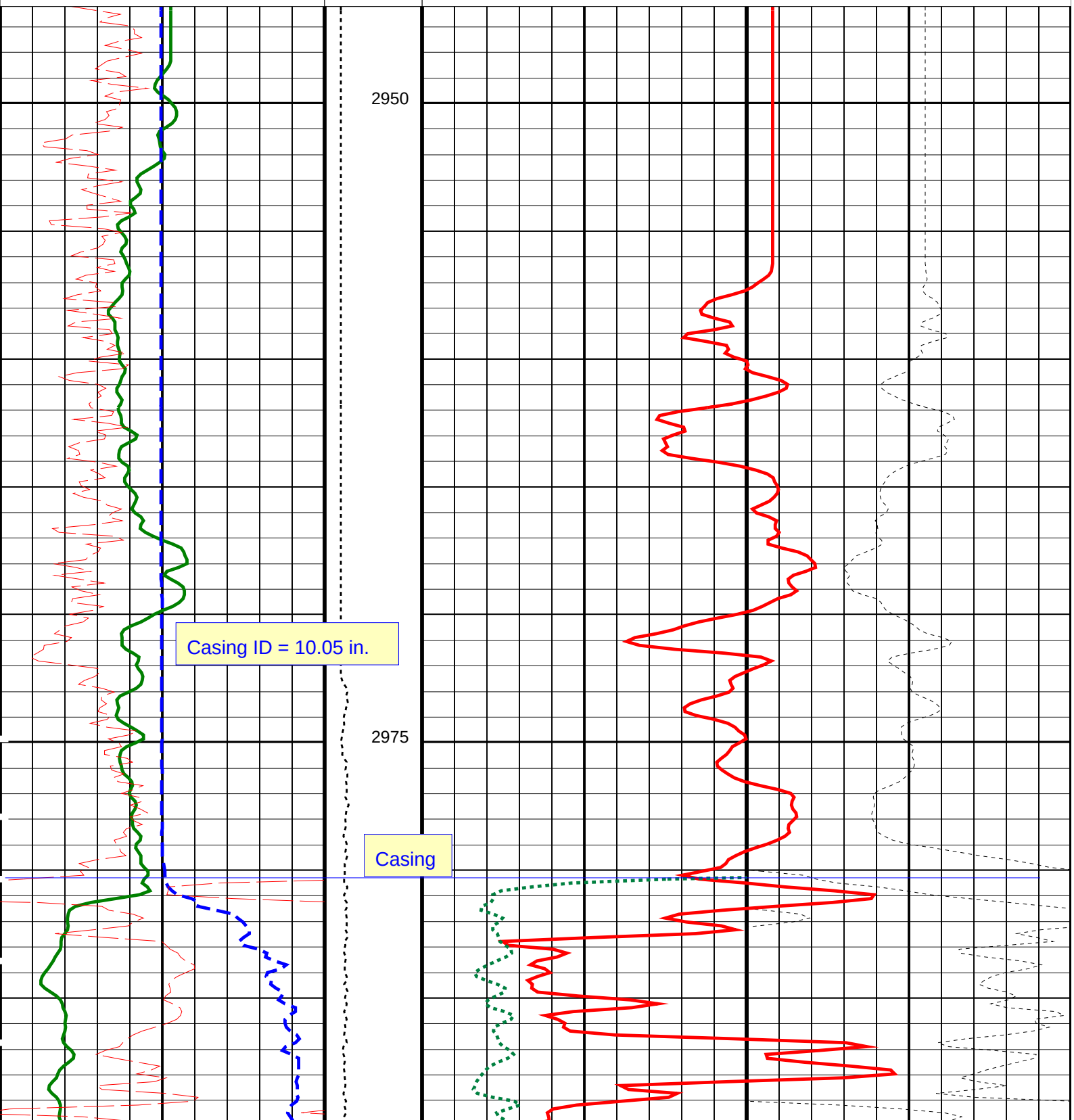
HLDS Long Spaced Photoelectric Effect (PEFL)
0 (----) 10

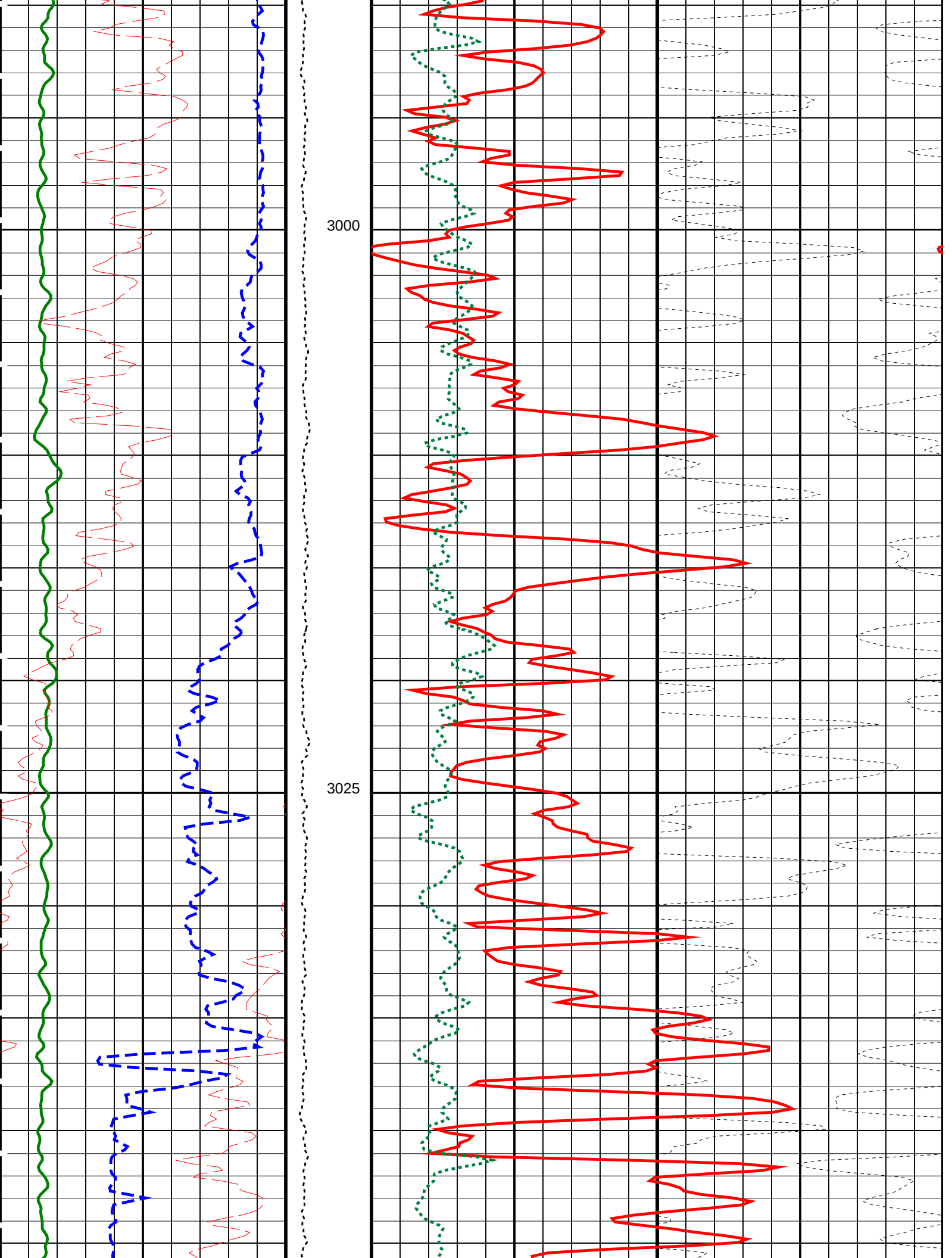
HLDS Bulk Density Correction (DRH)
−0.25 (G/C3) 0.25

SP (SP)
−80 (MV) 20

Tension (TENS) (LBF)
5000 0

HLDS Bulk Density (RHOM)
3 (G/C3) 1

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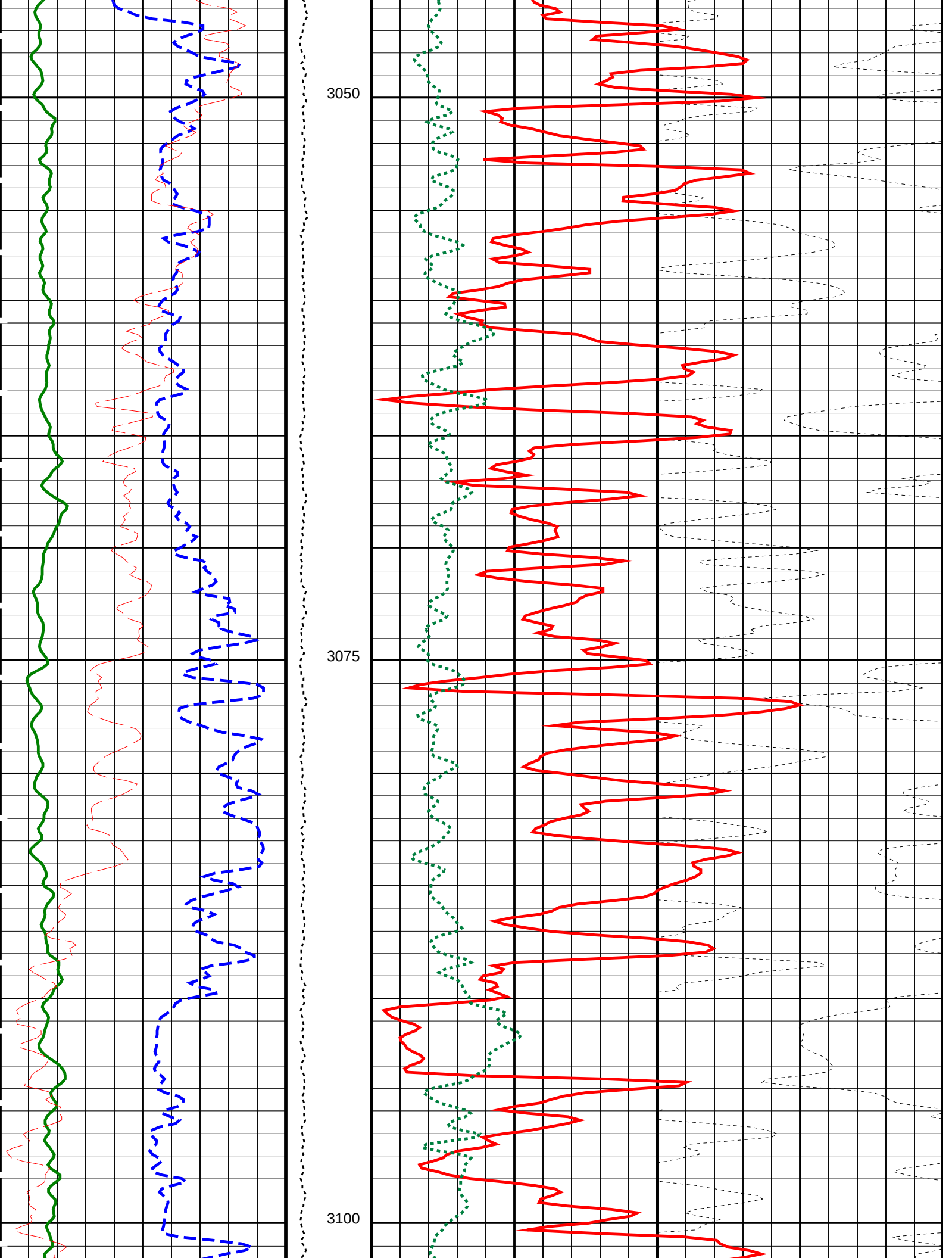
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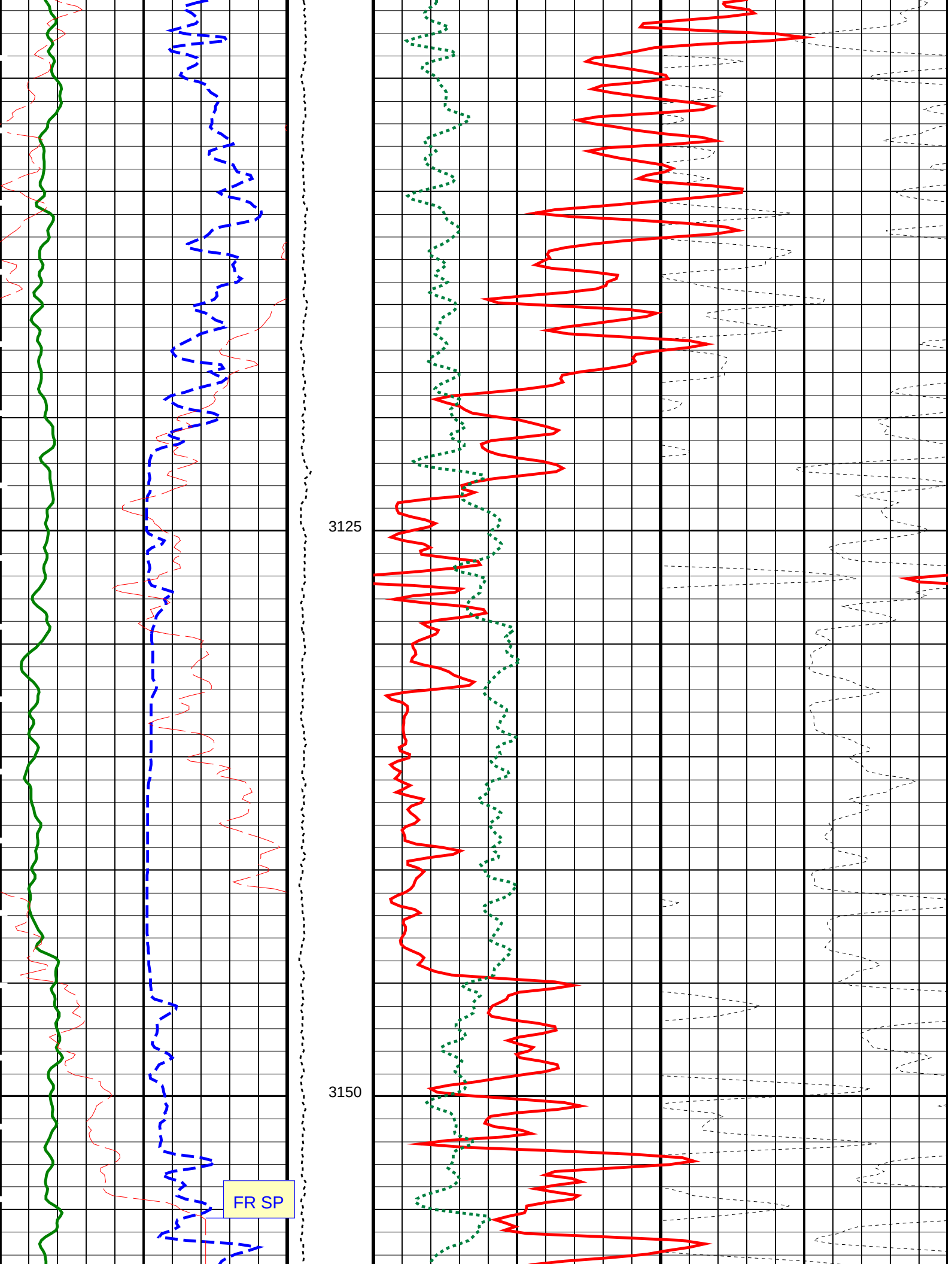
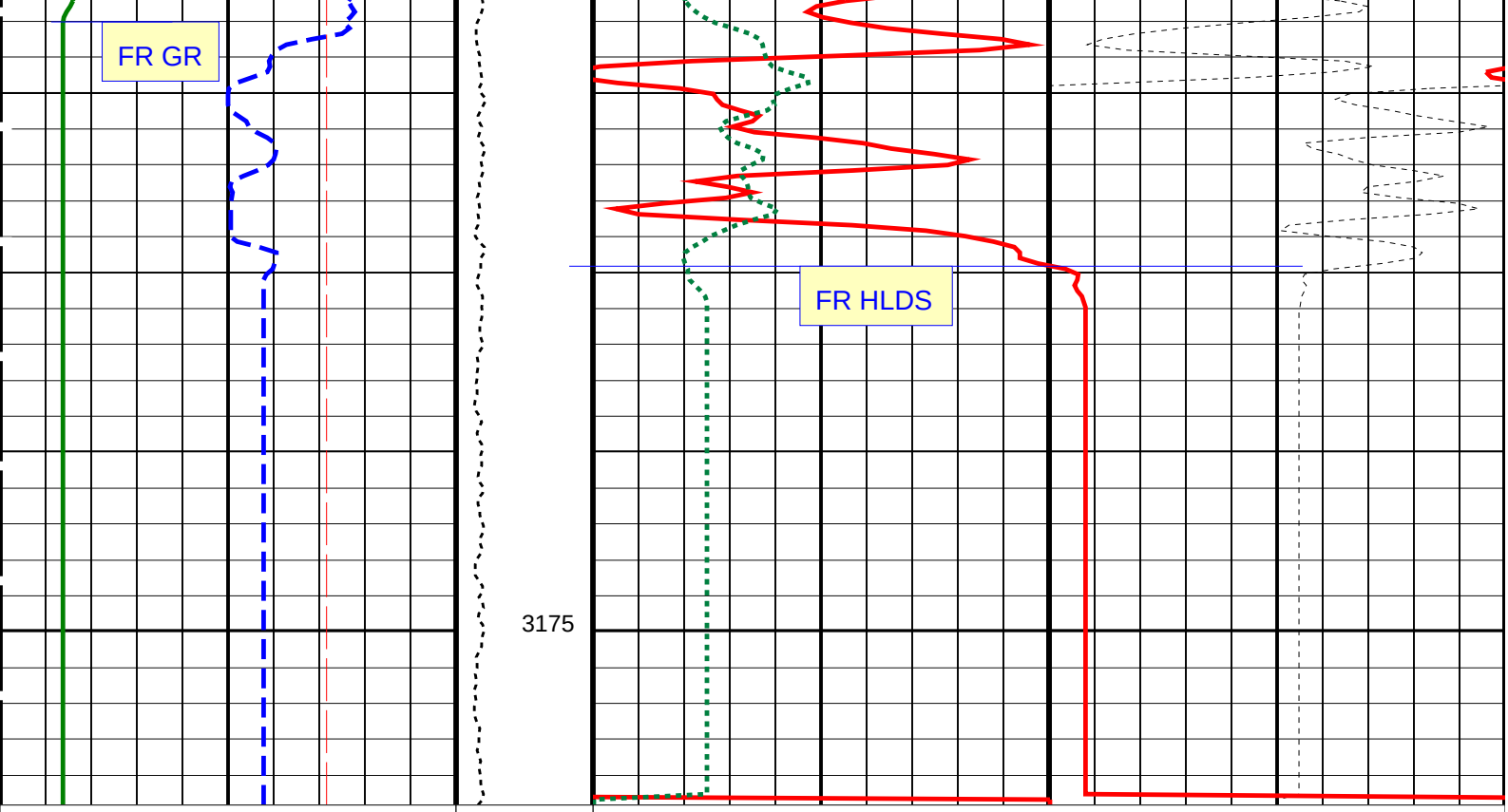
3075
3100


3125
3150
FR SP



SP (SP)
−80 (MV) 20

Tension (TENS) (LBF)
5000 0

HLDS Bulk Density (RHOM)
3 (G/C3) 1

HLDS Caliper (LCAL)
0 (IN) 20

HLDS Long Spaced Photoelectric Effect (PEFL)
0 (−−−−) 10

HLDS Bulk Density Correction (DRH)
−0.25 (G/C3) 0.25

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 30

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	UBI−D: Ultrasonic Borehole Imager − D		
	UBI Tool Working Mode for FPM	UBI3_SW250_180_1	
	UBI Tool Working Mode for Measurement	UBI3_SW250_180_1	
	Vertical Resolution	IN:_0.4	
	Default Fluid Velocity	206	US/F
	HLDS: Hostile Litho−Density Sonde		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	STAN	
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	−0.00138757	
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	1.09596		
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.08877		
BSP: Bridle SP				
SPNV	SP Next Value	0	MV	
System and Miscellaneous				
BS	Bit Size	9.875	IN	
DFD	Drilling Fluid Density	1.03	G/C3	
DO	Depth Offset for Playback	2.5	M	
PP	Playback Processing	RECOMPUTE		

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 12−Aug−2010 21:36

OP System Version: 17C0−154

UBI−D	SRPC−3971−Q1_2010_OP17	GPIT−A/B	SRPC−3971−Q1_2010_OP17
DTA−A	17C0−154	MTT_LDEO−A	17C0−154
HLDS	SPC−3961−OP17_NUCL	LDSC−B	SPC−3961−OP17_NUCL
HNGC−B	SPC−3961−OP17_NUCL	HNGS−BA	SPC−3961−OP17_NUCL
DTC−H	17C0−154	BSP	17C0−154

Input DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_014LUP	FN:13	PRODUCER	12−Aug−2010 08:32	3177.5 M	2943.8 M

Output DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_037PUP	FN:36	PRODUCER	12−Aug−2010 21:36		

Schlumberger

Second Pass
1:200 Scale

MAXIS Field Log

Input DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_015LUP	FN:14	PRODUCER	12−Aug−2010 09:57	3177.5 M	2943.9 M

Output DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_039PUP	FN:38	PRODUCER	12−Aug−2010 21:40	3179.8 M	2946.3 M

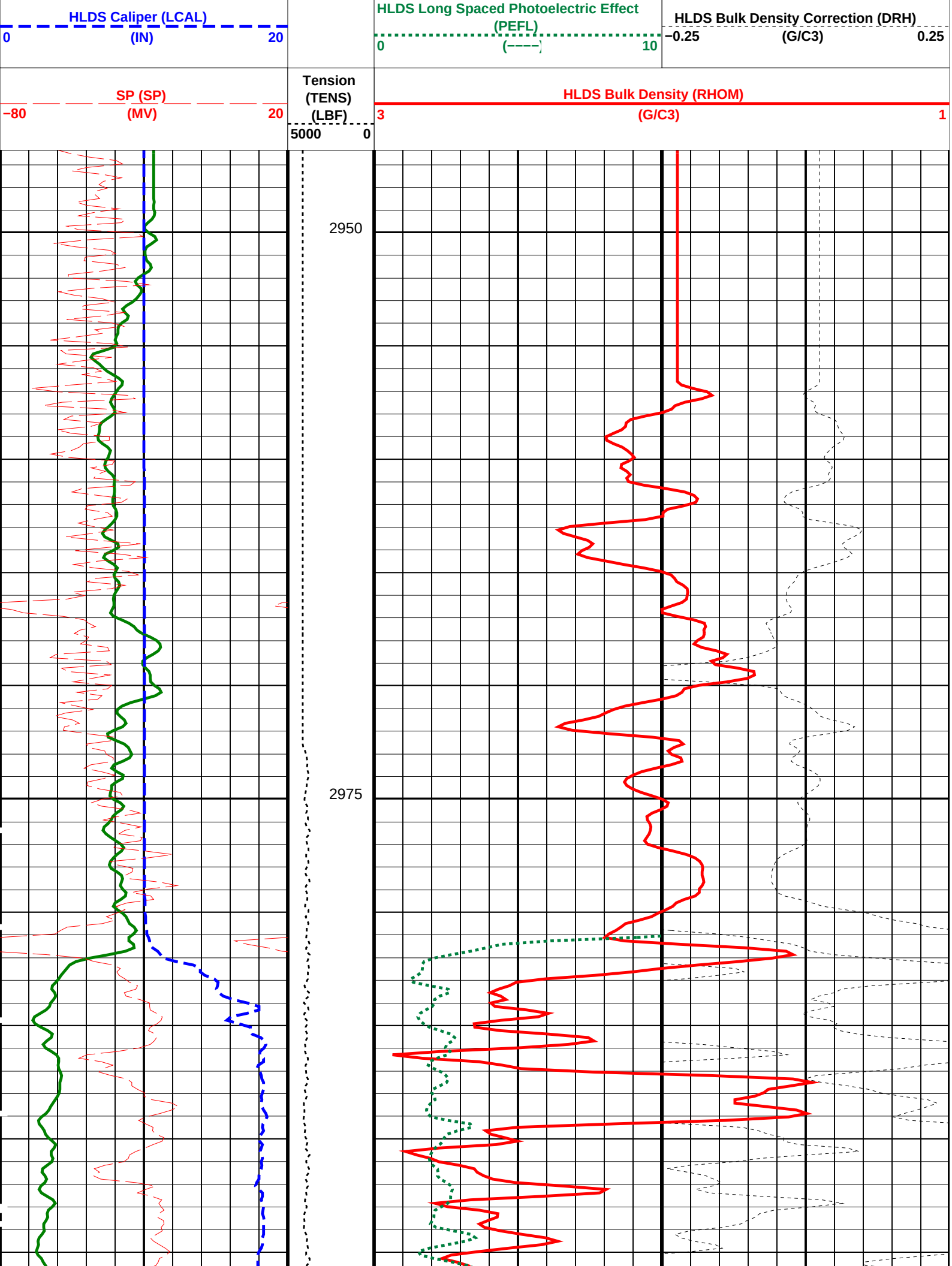
OP System Version: 17C0−154

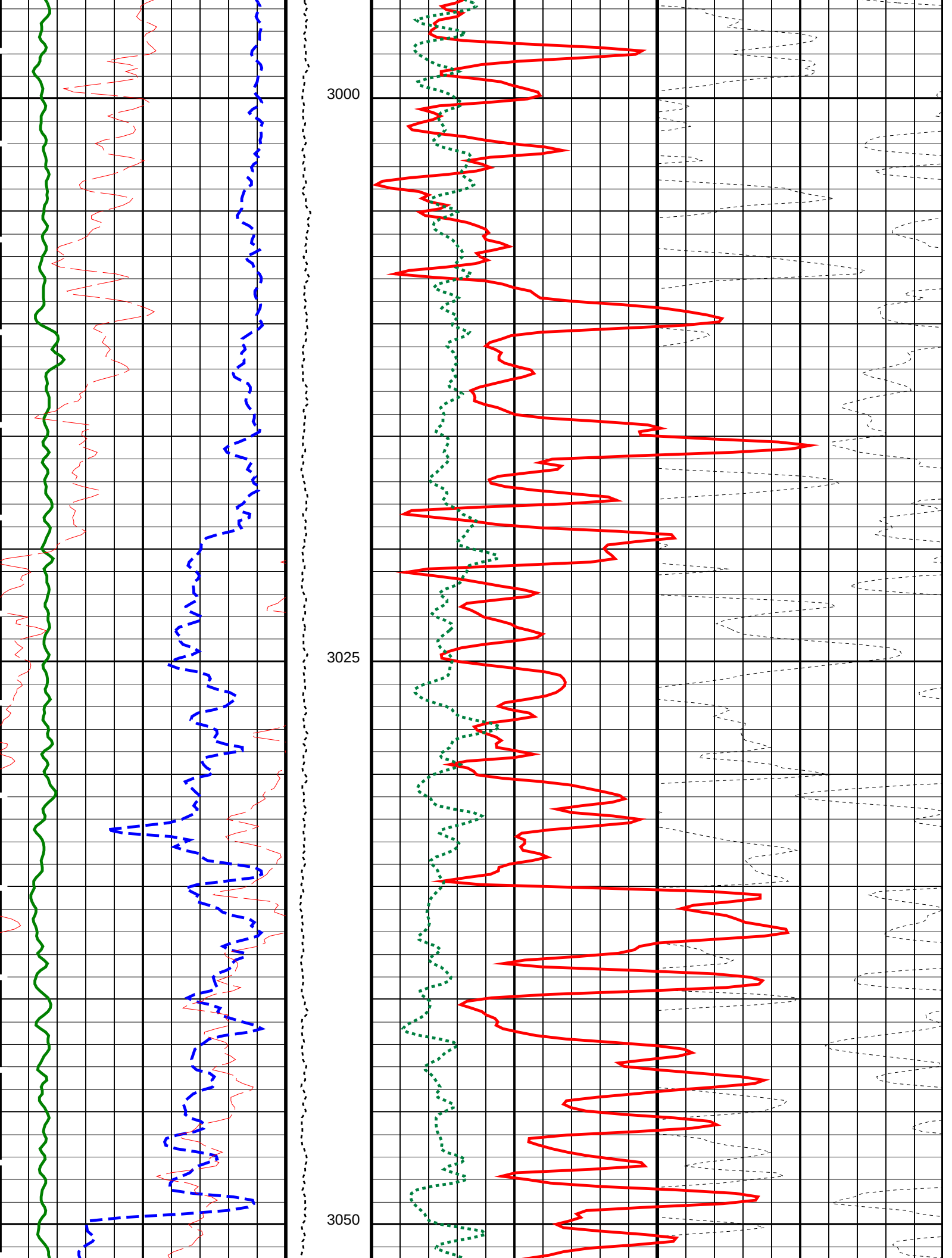
UBI−D	SRPC−3971−Q1_2010_OP17	GPIT−A/B	SRPC−3971−Q1_2010_OP17
DTA−A	17C0−154	MTT_LDEO−A	17C0−154
HLDS	SPC−3961−OP17_NUCL	LDSC−B	SPC−3961−OP17_NUCL
HNGC−B	SPC−3961−OP17_NUCL	HNGS−BA	SPC−3961−OP17_NUCL
DTC−H	17C0−154	BSP	17C0−154

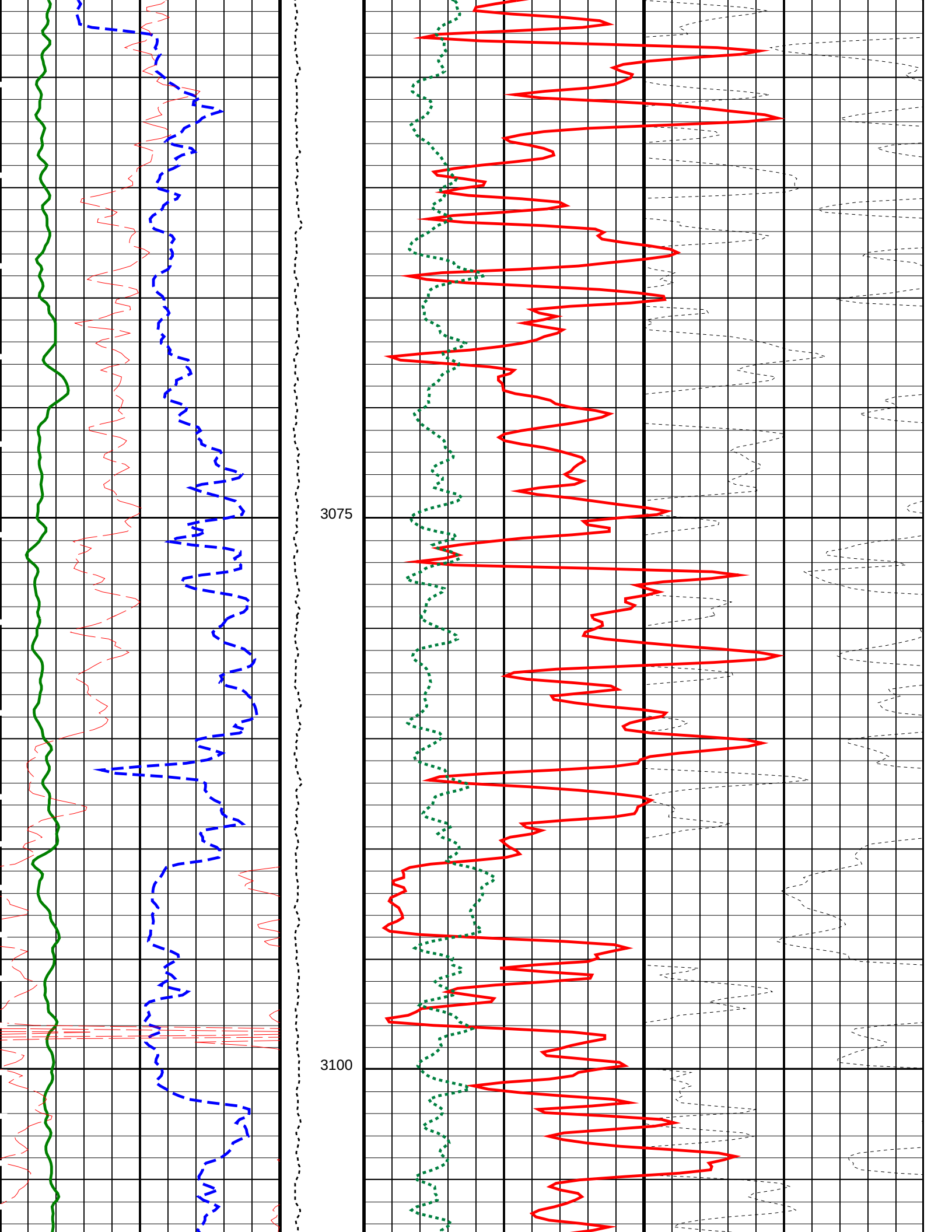
PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)		
0	(GAPI)	30


HLDS Caliper (LCAL)
0
(IN)
20
HLDS Long Spaced Photoelectric Effect (PEFL)
0
(----)
10
HLDS Bulk Density Correction (DRH)
−0.25
(G/C3)
0.25
SP (SP)
−80
(MV)
20
Tension (TENS) (LBF)
5000
0
HLDS Bulk Density (RHOM)
3
(G/C3)
1
2950
2975


3000
3025
3050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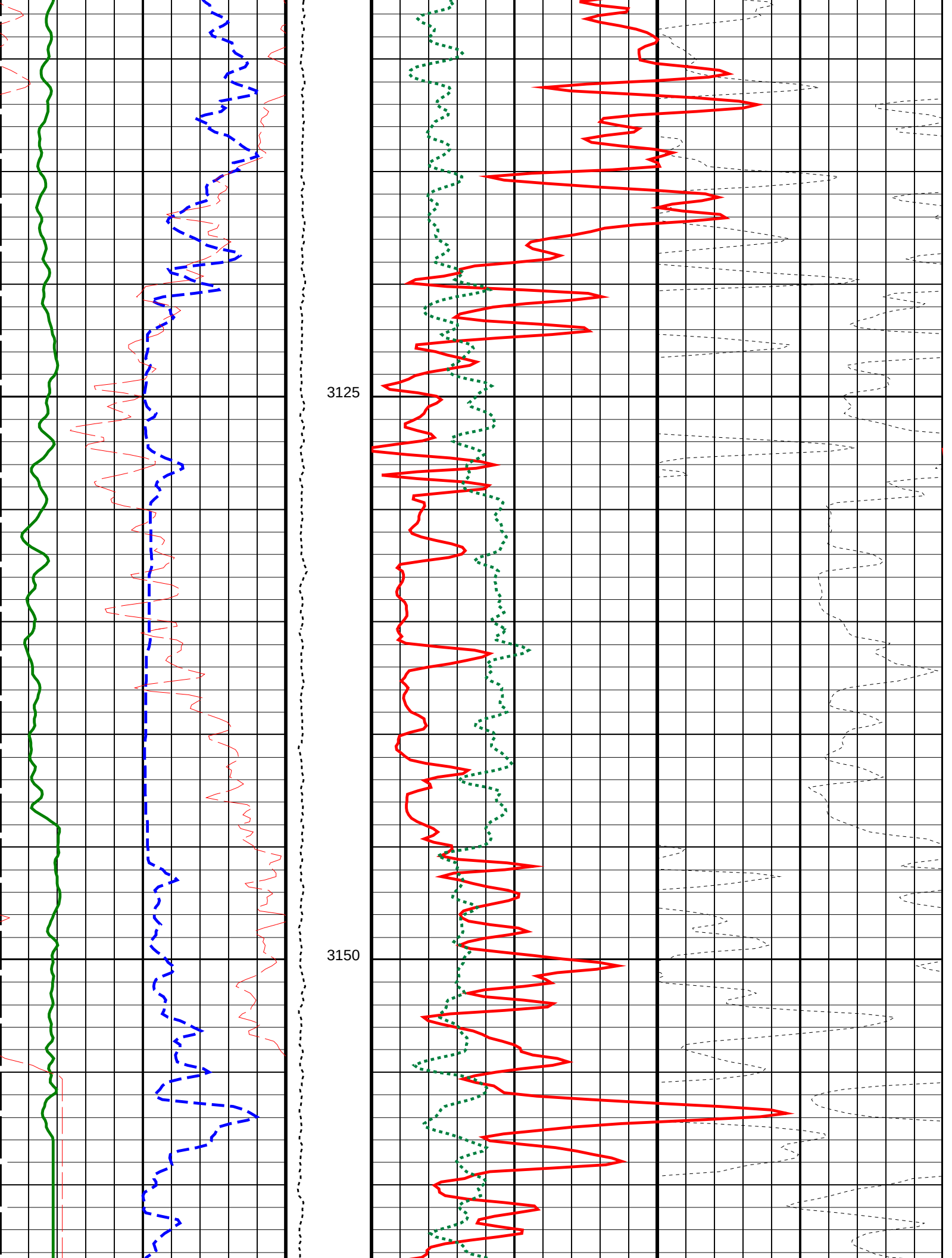
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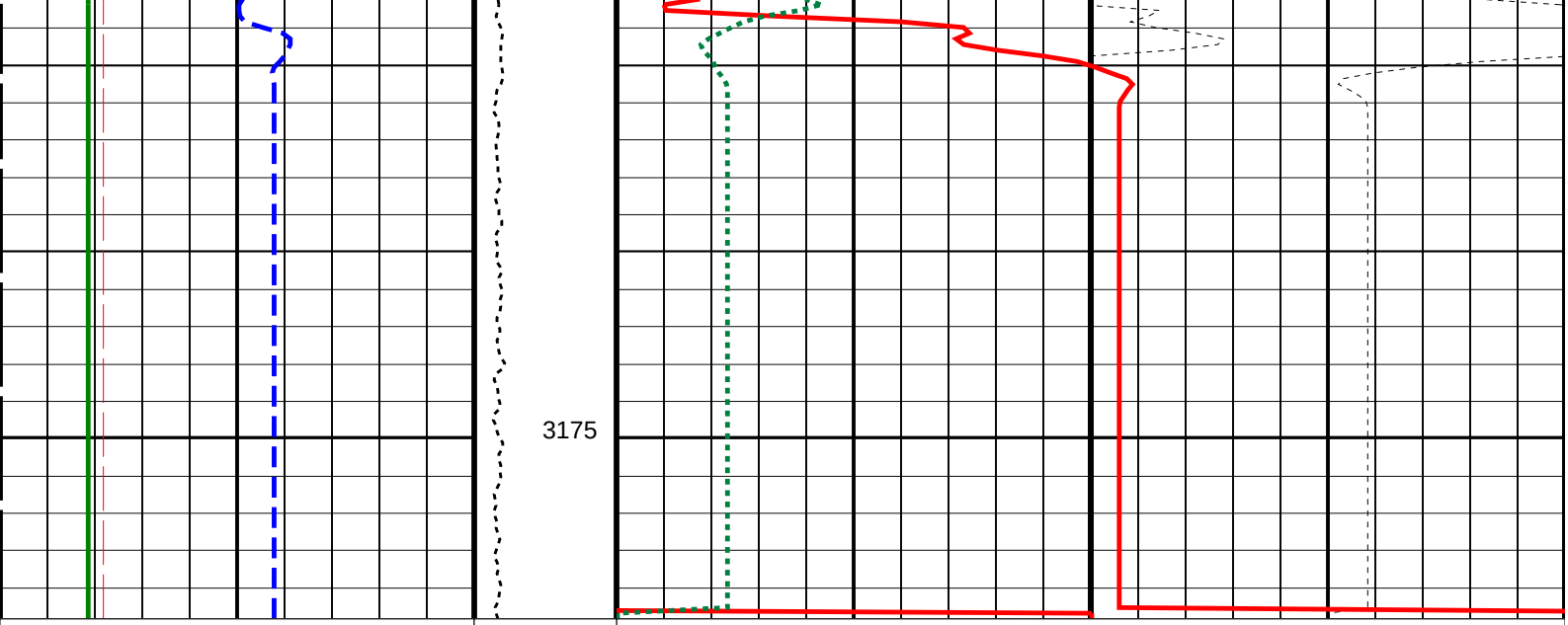


SP (SP)
−80 (MV) 20

Tension (TENS) (LBF)
5000 0

HLDS Bulk Density (RHOM)
3 (G/C3) 1

HLDS Caliper (LCAL)
0 (IN) 20

HLDS Long Spaced Photoelectric Effect (PEFL)
0 (−−−−) 10

HLDS Bulk Density Correction (DRH)
−0.25 (G/C3) 0.25

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 30

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	UBI−D: Ultrasonic Borehole Imager − D		
	UBI Tool Working Mode for FPM	UBI3_SW250_180_1	
	UBI Tool Working Mode for Measurement	UBI3_SW250_180_1	
	Vertical Resolution	IN:_0.4	
	Default Fluid Velocity	206	US/F
	HLDS: Hostile Litho−Density Sonde		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	STAN	
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	−0.00173482	
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	1.12002	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0817	
	BSP: Bridle SP		

BSP: Bridle SP			
SPNV	SP Next Value	0	MV
System and Miscellaneous			
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.03	G/C3
DO	Depth Offset for Playback	2.5	M
PP	Playback Processing	RECOMPUTE	

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 12−Aug−2010 21:40

OP System Version: 17C0−154

UBI−D	SRPC−3971−Q1_2010_OP17	GPIT−A/B	SRPC−3971−Q1_2010_OP17
DTA−A	17C0−154	MTT_LDEO−A	17C0−154
HLDS	SPC−3961−OP17_NUCL	LDSC−B	SPC−3961−OP17_NUCL
HNGC−B	SPC−3961−OP17_NUCL	HNGS−BA	SPC−3961−OP17_NUCL
DTC−H	17C0−154	BSP	17C0−154

Input DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_015LUP	FN:14	PRODUCER	12−Aug−2010 09:57	3177.5 M	2943.9 M

Output DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_039PUP	FN:38	PRODUCER	12−Aug−2010 21:40		

Schlumberger

Third Pass
1:200 Scale

MAXIS Field Log

Input DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_016LUP	FN:15	PRODUCER	12−Aug−2010 11:27	3177.5 M	3017.2 M

Output DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_040PUP	FN:39	PRODUCER	12−Aug−2010 21:42	3179.1 M	3018.7 M

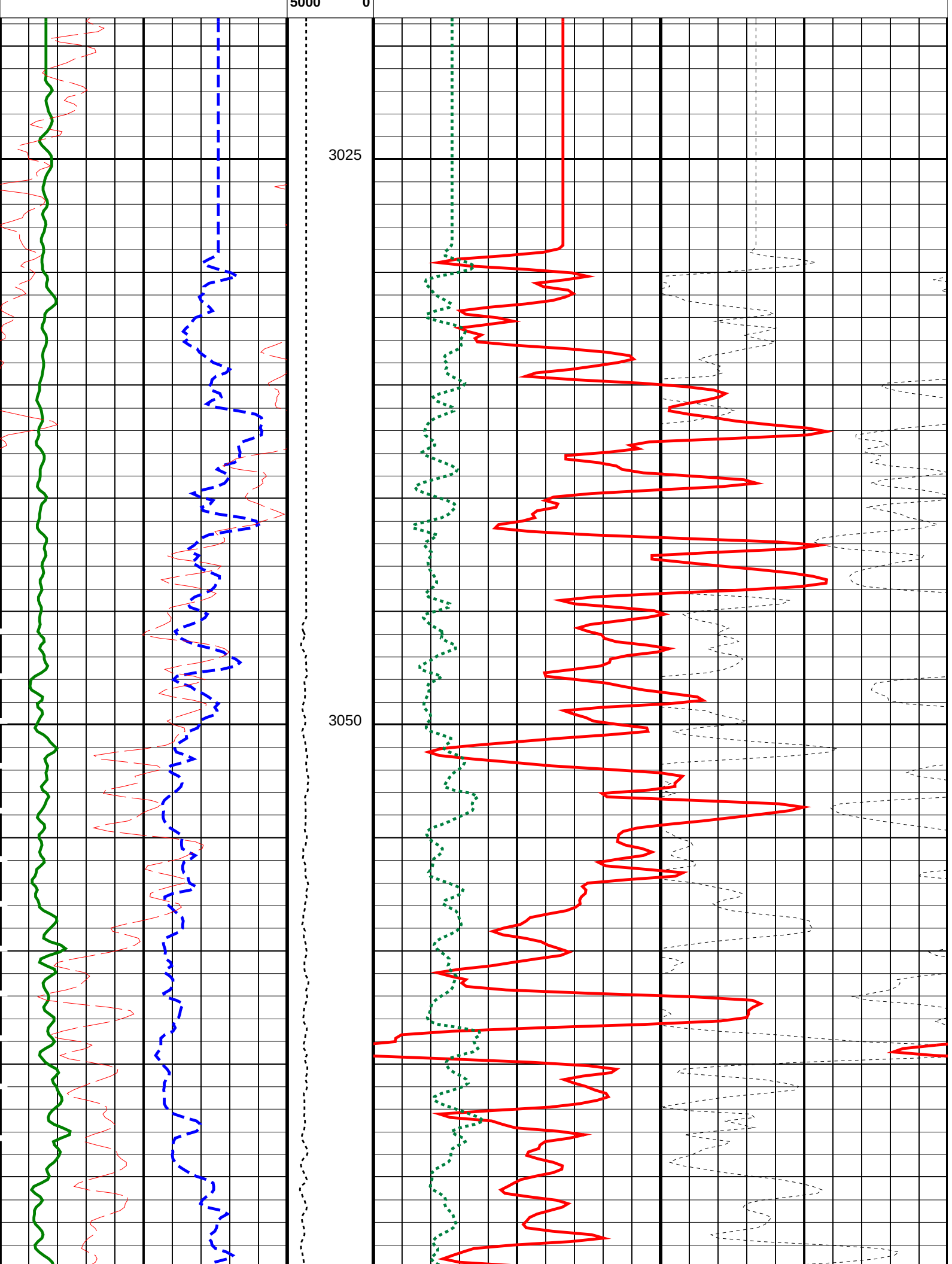
OP System Version: 17C0−154

UBI−D	SRPC−3971−Q1_2010_OP17	GPIT−A/B	SRPC−3971−Q1_2010_OP17
DTA−A	17C0−154	MTT_LDEO−A	17C0−154
HLDS	SPC−3961−OP17_NUCL	LDSC−B	SPC−3961−OP17_NUCL
HNGC−B	SPC−3961−OP17_NUCL	HNGS−BA	SPC−3961−OP17_NUCL
DTC−H	17C0−154	BSP	17C0−154

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)				
0 (GAPI) 30				
HLDS Caliper (LCAL)		HLDS Long Spaced Photoelectric Effect (PEFL)	HLDS Bulk Density Correction (DRH)	
0 (IN) 20		0 (−−−−) 10	−0.25 (G/C3) 0.25	
SP (SP)	Tension (TENS)	HLDS Bulk Density (RHOM)		
−80 (MV) 20	(LBF)	3 (G/C3) 1		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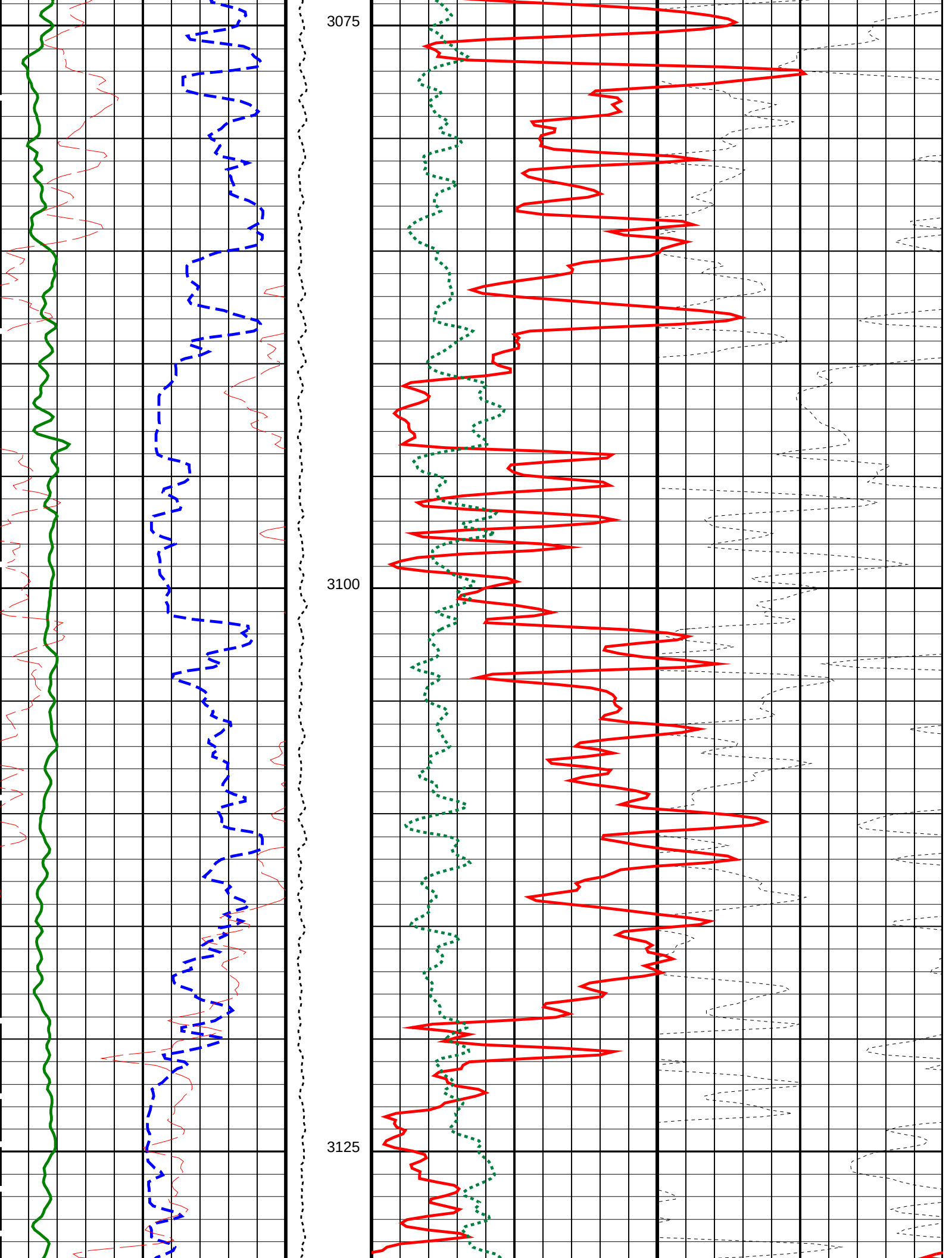
0
3025
3050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3100
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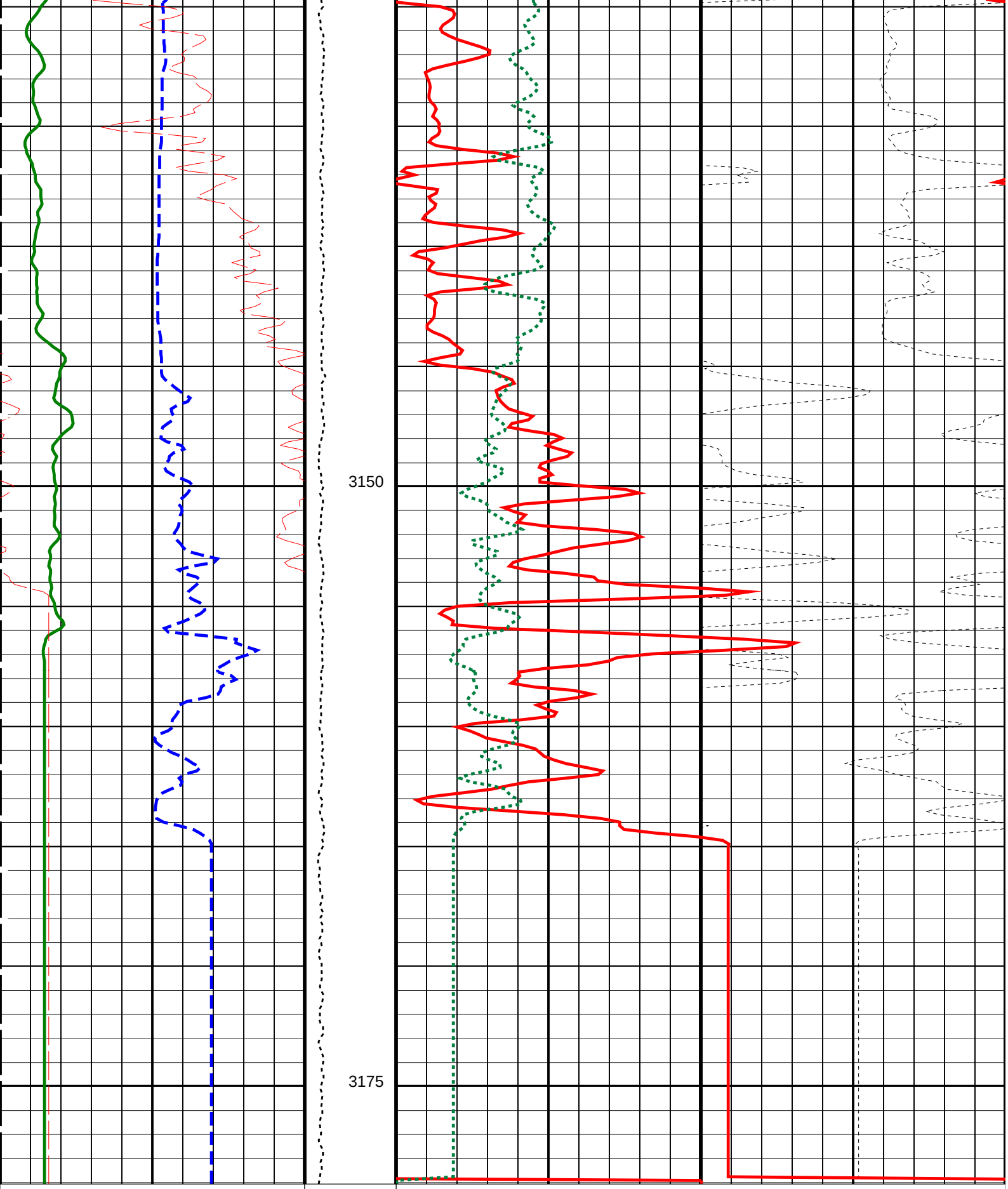


SP (SP)
−80 (MV) 20

Tension (TENS) (LBF)
5000 0

HLDS Bulk Density (RHOM)
3 (G/C3) 1

HLDS Caliper (LCAL)
0 (IN) 20

HLDS Long Spaced Photoelectric Effect (PEFL)
0 (−−−−) 10

HLDS Bulk Density Correction (DRH)
−0.25 (G/C3) 0.25

HNGS Spectroscopy Gamma Ray (HSGR)		
0	(GAPI)	30

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	UBI−D: Ultrasonic Borehole Imager − D		
	UBI Tool Working Mode for FPM	UBI3_SW250_180_1	
	UBI Tool Working Mode for Measurement	UBI3_SW250_180_1	
	Vertical Resolution	IN:_0.4	
	Default Fluid Velocity	206	US/F
	HLDS: Hostile Litho−Density Sonde		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	STAN	
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	−0.00173482	
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	1.12002	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.0817	
	BSP: Bridle SP		
SPNV	SP Next Value	0	MV
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.03	G/C3
DO	Depth Offset for Playback	1.5	M
PP	Playback Processing	RECOMPUTE	

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 12−Aug−2010 21:42

OP System Version: 17C0−154

UBI−D	SRPC−3971−Q1_2010_OP17	GPIT−A/B	SRPC−3971−Q1_2010_OP17
DTA−A	17C0−154	MTT_LDEO−A	17C0−154
HLDS	SPC−3961−OP17_NUCL	LDSC−B	SPC−3961−OP17_NUCL
HNGC−B	SPC−3961−OP17_NUCL	HNGS−BA	SPC−3961−OP17_NUCL
DTC−H	17C0−154	BSP	17C0−154

Input DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_016LUP	FN:15	PRODUCER	12−Aug−2010 11:27	3177.5 M	3017.2 M

Output DLIS Files

DEFAULT	UBI_MTT_LDEO_LDL_040PUP	FN:39	PRODUCER	12−Aug−2010 21:42	

Schlumberger

Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
General Purpose Inclinometer Wellsite Calibration − CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 12−Aug−2010 5:13							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	92	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	10	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	448	N/A	N/A	N/A	
General Purpose Inclinometer Wellsite Calibration − CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 12−Aug−2010 5:13							
TEMPERATURE REFERENCE :	N/A	N/A	19	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	12	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	428	N/A	N/A	N/A	
Hostile Litho−Density Sonde Wellsite Calibration − Background Measurement							
Master: 4−Jul−2010 23:45 Before: 12−Aug−2010 5:17 After: 12−Aug−2010 15:09							
SS Cs Resolution Bkg	9.000	8.417	8.419	8.439	0.01980	1.800	%
LS Cs Resolution Bkg	9.000	8.549	8.563	8.556	−0.006703	1.800	%
LSW1 Background	100.0	75.11	72.89	71.83	−1.058	3.000	CPS
LSW2 Background	100.0	67.26	67.44	67.47	0.02760	3.000	CPS
LSW3 Background	200.0	151.3	153.4	151.4	−1.979	6.000	CPS
LSW4 Background	250.0	185.7	185.4	185.1	−0.2671	7.500	CPS
LSW5 Background	600.0	419.2	415.7	416.3	0.5545	18.00	CPS
SSW1 Background	100.0	72.57	72.63	70.79	−1.836	3.000	CPS
SSW2 Background	200.0	125.0	125.3	124.9	−0.3862	6.000	CPS
SSW3 Background	500.0	333.7	334.1	334.1	−0.04120	15.00	CPS
SSW4 Background	270.0	179.0	179.4	177.1	−2.313	8.100	CPS
SSW5 Background	200.0	130.7	128.2	128.8	0.5273	6.000	CPS
Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement							
Master: 4−Jul−2010 23:45							
LSW1 Aluminum	600.0	548.9	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	809.7	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	983.2	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	493.5	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	453.0	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2290	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6553	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9517	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3989	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	532.0	N/A	N/A	N/A	N/A	CPS
Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement							
Master: 4−Jul−2010 23:45							
LSW1 Iron	400.0	375.7	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	658.3	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	874.6	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	453.3	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	419.6	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1714	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5518	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8758	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3679	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	477.8	N/A	N/A	N/A	N/A	CPS
Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration							
Before: 4−Jul−2010 3:13							
HLDS Caliper Small Ring	12.00	N/A	13.61	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	17.11	N/A	N/A	N/A	IN
Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check							
Master: 3−Jul−2010 10:09 Before: 12−Aug−2010 5:19 After: 12−Aug−2010 15:10							
Na 511 Peak Loc	40.00	39.38	39.58	39.62	0.04423	1.000	

Na 511 Peak Loc	40.00	39.58	39.58	39.62	0.04423	1.000	
Na 511 Peak Res	15.50	14.94	15.79	14.86	−0.9317	2.000	%
High Voltage	1150	1173	1152	1157	4.851	N/A	V
Na 1785 Peak Loc	142.6	141.5	142.5	142.6	0.1303	7.000	
Na 1785 Peak Res	8.500	8.736	7.294	7.672	0.3777	2.000	%
Temperature	15.50	23.93	20.45	19.71	−0.7413	N/A	DEGC
Na Count Rate	45.00	30.22	28.24	28.23	−0.006481	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check
Master: 3−Jul−2010 10:09 Before: 12−Aug−2010 5:19 After: 12−Aug−2010 15:10

Na 511 Peak Loc	40.00	39.56	39.70	39.58	−0.1246	1.000	
Na 511 Peak Res	15.50	16.29	14.97	15.50	0.5229	2.000	%
High Voltage	1150	1097	1089	1090	0.6023	N/A	V
Na 1785 Peak Loc	142.6	141.9	142.3	141.3	−0.9653	7.000	
Na 1785 Peak Res	8.500	8.575	7.621	9.293	1.671	2.000	%
Temperature	15.50	24.35	20.88	21.54	0.6568	N/A	DEGC
Na Count Rate	45.00	30.12	28.16	28.11	−0.04325	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2
Master: 3−Jul−2010 10:09 Before: 12−Aug−2010 5:19 After: 12−Aug−2010 15:10

Coincidence Count Rate Ratio	1.000	1.003	1.001	1.004	0.002971	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 1 Calibration
Master: 3−Jul−2010 10:09

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	211.4	−−	−−	−−	−−	
Th Peak Res	7.000	6.988	−−	−−	−−	−−	%
Background Count Rate	142.5	17.94	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.021	−−	−−	−−	−−	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 2 Calibration
Master: 3−Jul−2010 10:09

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	208.6	−−	−−	−−	−−	
Th Peak Res	7.000	6.911	−−	−−	−−	−−	%
Background Count Rate	142.5	18.39	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.003	−−	−−	−−	−−	

General Purpose Inclinometer / Equipment Identification

Primary Equipment:

GPIT Cartridge − AC	GPIC − AC

Auxiliary Equipment:

GPIT Housing	GPIH − A

Hostile Litho−Density Sonde / Equipment Identification

Primary Equipment:

Hostile Litho Density Sonde	HLDS − D	35
Hostile Litho Density High Voltage	HLDV − D	51
Gamma Source Radioactive	GSR − Z	2397

Auxiliary Equipment:

Hostile Litho Density Pad	HLDP − C	61
Hostile Litho Density High Voltage Housi	HEH − H	53

Hostile Litho−Density Sonde Wellsite Calibration

Background Measurement

Phase	SS Cs Resolution Bkg %	Value
Master		8.417
Before		8.419
After		8.439

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

Phase	LS Cs Resolution Bkg %	Value
Master		8.549
Before		8.563
After		8.556

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

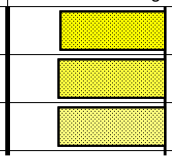
Phase	LSW1 Background CPS	Value
Master		75.11
Before		72.89
After		71.83

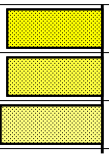
55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)

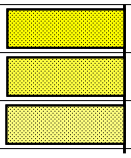
Phase	LSW2 Background CPS	Value
Master		67.26
Before		67.44
After		67.47

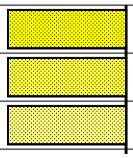
Phase	LSW3 Background CPS	Value
Master		151.3
Before		153.4
After		151.4

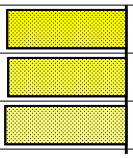
Phase	LSW4 Background CPS	Value
Master		185.7
Before		185.4
After		185.1

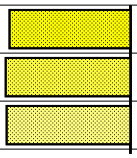
Phase	LSW5 Background CPS	Value
Master		419.2
Before		415.7
After		416.3
330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)

Phase	SSW1 Background CPS	Value
Master		72.57
Before		72.63
After		70.79
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)

Phase	SSW2 Background CPS	Value
Master		125.0
Before		125.3
After		124.9
100.0 (Minimum)	200.0 (Nominal)	260.0 (Maximum)

Phase	SSW3 Background CPS	Value
Master		333.7
Before		334.1
After		334.1
280.0 (Minimum)	500.0 (Nominal)	700.0 (Maximum)

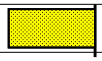
Phase	SSW4 Background CPS	Value
Master		179.0
Before		179.4
After		177.1
150.0 (Minimum)	270.0 (Nominal)	380.0 (Maximum)

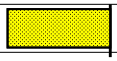
Phase	SSW5 Background CPS	Value
Master		130.7
Before		128.2
After		128.8
110.0 (Minimum)	200.0 (Nominal)	270.0 (Maximum)

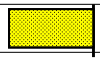
Master: 4−Jul−2010 23:45 Before: 12−Aug−2010 5:17 After: 12−Aug−2010 15:09

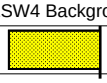
Hostile Litho−Density Sonde Master Calibration

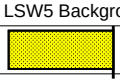
Detector Background Measurement

Phase	LSW1 Background CPS	Value
Master		75.11
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)

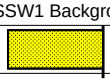
Phase	LSW2 Background CPS	Value
Master		67.26
50.00 (Minimum)	100.0 (Nominal)	140.0 (Maximum)

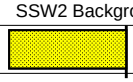
Phase	LSW3 Background CPS	Value
Master		151.3
110.0 (Minimum)	200.0 (Nominal)	290.0 (Maximum)

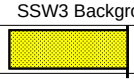
Phase	LSW4 Background CPS	Value
Master		185.7
140.0 (Minimum)	250.0 (Nominal)	360.0 (Maximum)

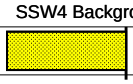
Phase	LSW5 Background CPS	Value
Master		419.2
330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)

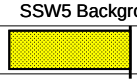
Phase	LS Cs Resolution Bkg %	Value
Master		8.549
7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)

Phase	SSW1 Background CPS	Value
Master		72.57
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)

Phase	SSW2 Background CPS	Value
Master		125.0
100.0 (Minimum)	200.0 (Nominal)	260.0 (Maximum)

Phase	SSW3 Background CPS	Value
Master		333.7
280.0 (Minimum)	500.0 (Nominal)	700.0 (Maximum)

Phase	SSW4 Background CPS	Value
Master		179.0
150.0 (Minimum)	270.0 (Nominal)	380.0 (Maximum)

Phase	SSW5 Background CPS	Value
Master		130.7
110.0 (Minimum)	200.0 (Nominal)	270.0 (Maximum)

Phase	SS Cs Resolution Bkg %	Value
Master		8.417
7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)

Master: 4−Jul−2010 23:45

Hostile Litho−Density Sonde Master Calibration

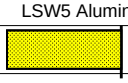
Detector Aluminum Measurement (bkgd−subtracted)

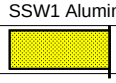
Phase	LSW1 Aluminum CPS	Value
Master		548.9
420.0 (Minimum)	600.0 (Nominal)	770.0 (Maximum)

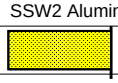
Phase	LSW2 Aluminum CPS	Value
Master		809.7
650.0 (Minimum)	900.0 (Nominal)	1150 (Maximum)

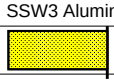
Phase	LSW3 Aluminum CPS	Value
Master		983.2
800.0 (Minimum)	1100 (Nominal)	1450 (Maximum)

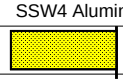
Phase	LSW4 Aluminum CPS	Value
Master		493.5
410.0 (Minimum)	580.0 (Nominal)	740.0 (Maximum)

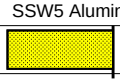
Phase	LSW5 Aluminum CPS	Value
Master		453.0
410.0 (Minimum)	570.0 (Nominal)	740.0 (Maximum)

Phase	SSW1 Aluminum CPS	Value
Master		2290
2000 (Minimum)	2800 (Nominal)	3200 (Maximum)

Phase	SSW2 Aluminum CPS	Value
Master		6553
5800 (Minimum)	8000 (Nominal)	9300 (Maximum)

Phase	SSW3 Aluminum CPS	Value
Master		9517
8300 (Minimum)	11600 (Nominal)	13500 (Maximum)

Phase	SSW4 Aluminum CPS	Value
Master		3989
3500 (Minimum)	5000 (Nominal)	5800 (Maximum)

Phase	SSW5 Aluminum CPS	Value
Master		532.0
470.0 (Minimum)	660.0 (Nominal)	770.0 (Maximum)

Master: 4−Jul−2010 23:45

Hostile Litho−Density Sonde Master Calibration

Detector Litholog Measurement (bkgd−subtracted)

Phase	LSW1 Iron CPS	Value
Master		375.7
290.0 (Minimum)	400.0 (Nominal)	560.0 (Maximum)

Phase	LSW2 Iron CPS	Value
Master		658.3
520.0 (Minimum)	730.0 (Nominal)	950.0 (Maximum)

Phase	LSW3 Iron CPS	Value
Master		874.6
720.0 (Minimum)	1000 (Nominal)	1350 (Maximum)

Phase	LSW4 Iron CPS	Value
Master		453.3
	370.0 (Minimum) 520.0 (Nominal) 700.0 (Maximum)	

Phase	LSW5 Iron CPS	Value
Master		419.6
	340.0 (Minimum) 470.0 (Nominal) 750.0 (Maximum)	

Phase	SSW1 Iron CPS	Value
Master		1714
	1500 (Minimum) 2100 (Nominal) 2400 (Maximum)	

Phase	SSW2 Iron CPS	Value
Master		5518
	4900 (Minimum) 6800 (Nominal) 7900 (Maximum)	

Phase	SSW3 Iron CPS	Value
Master		8758
	7800 (Minimum) 10800 (Nominal) 12600 (Maximum)	

Phase	SSW4 Iron CPS	Value
Master		3679
	3300 (Minimum) 4600 (Nominal) 5400 (Maximum)	

Phase	SSW5 Iron CPS	Value
Master		477.8
	420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum)	

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Hostile Litho−Density Sonde Master Calibration

Quality Ratios

Phase	AL CALIBRATION RATIO 1	Value
Master		1.039
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	

Phase	AL CALIBRATION RATIO 2	Value
Master		2.105
	1.900 (Minimum) 2.100 (Nominal) 2.300 (Maximum)	

Phase	AL CALIBRATION RATIO 3	Value
Master		0.5800
	0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	AL CALIBRATION RATIO 4	Value
Master		0.5065
	0.4000 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	Pad−Wear SS Ratio	Value
Master		0.9934
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Wear LS Ratio	Value
Master		0.9957
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Position SS Ratio	Value
Master		1.008
	0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum)	

Phase	Pad−Position LS Ratio	Value
Master		0.9853
	0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum)	

Master: 4−Jul−2010 23:45

Litho−Density Spectroscopy Cartridge − B / Equipment Identification

Primary Equipment:		
LDSC Cartridge	LDSC − B	521
Auxiliary Equipment:		
LDSC Housing	LDSH − A	319

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		39.38
Before		39.58
After		39.62
	37.50 40.00 43.50	

Phase	Na 511 Peak Res %	Value
Master		14.94
Before		15.79
After		14.86
	12.00 15.50 19.00	

Phase	High Voltage V	Value
Master		1173
Before		1152
After		1157
	900.0 1150 1600	

	(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)
Phase	Na 1785 Peak Loc		Value	Phase	Na 1785 Peak Res %		Value	Phase	Temperature DEGC		Value
Master			141.5	Master			8.736	Master			23.93
Before			142.5	Before			7.294	Before			20.45
After			142.6	After			7.672	After			19.71
	135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)		7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)		−28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)

Phase	Na Count Rate CPS		Value
Master			30.22
Before			28.24
After			28.23
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 3−Jul−2010 10:09 Before: 12−Aug−2010 5:19 After: 12−Aug−2010 15:10

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
Master			39.56	Master			16.29	Master			1097
Before			39.70	Before			14.97	Before			1089
After			39.58	After			15.50	After			1090
	37.50 (Minimum)	40.00 (Nominal)	43.50 (Maximum)		12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)		900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)
Phase	Na 1785 Peak Loc		Value	Phase	Na 1785 Peak Res %		Value	Phase	Temperature DEGC		Value
Master			141.9	Master			8.575	Master			24.35
Before			142.3	Before			7.621	Before			20.88
After			141.3	After			9.293	After			21.54
	135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)		7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)		−28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)

Phase	Na Count Rate CPS		Value
Master			30.12
Before			28.16
After			28.11
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 3−Jul−2010 10:09 Before: 12−Aug−2010 5:19 After: 12−Aug−2010 15:10

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio		Value
Master			1.003
Before			1.001
After			1.004
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)

Master: 3−Jul−2010 10:09
Before: 12−Aug−2010 5:19
After: 12−Aug−2010 15:10

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

Phase	Na 511 Peak Set Point		Value	Phase	Th Peak Loc		Value	Phase	Th Peak Res %		Value
Master			41.00	Master			211.4	Master			6.988
	38.00 (Minimum)	40.00 (Nominal)	43.00 (Maximum)		201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)		5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS		Value	Phase	Gain Ratio		Value				
Master			17.94	Master			1.021				
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				

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Master: 3−Jul−2010 10:09

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00
	38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)	

Phase	Th Peak Loc	Value
Master		208.6
	201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)	

Phase	Th Peak Res %	Value
Master		6.911
	5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

Phase	Background Count Rate CPS	Value
Master		18.39
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)	

Phase	Gain Ratio	Value
Master		1.003
	0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 3−Jul−2010 10:09

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC−H Auxiliary Cartridge	DTCH − A
DTC−H Telemetry Cartridge	DTCH − A

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing	ECH − KC

Company: **Lamont Doherty**

Schlumberger

Well: **Expedition 327 Site U1362A**
Field: **Juan de Fuca**
Rig: **JOIDES Resolution**
Country: **USA**

Litho−Density (HLDS)