

### Input DLIS Files

DEFAULT HRLA\_MAXS\_MAPC\_TLD\_056LUP FN:64 PRODUCER 08-Jan-2009 03:46 3584.4 M 2732.2 M

### Output DLIS Files

DEFAULT HRLA\_MAXS\_MAPC\_TLD\_068PUP FN:79 PRODUCER 08-Jan-2009 08:34 3589.0 M 2736.8 M

### Integrated Hole/Cement Volume Summary

Hole Volume = 34.74 M3  
 Cement Volume = 15.25 M3 (assuming 7.00 IN casing O.D.)  
 Computed from 3586.4 M to 2801.6 M using data channel(s) HCAL

### OP System Version: 16C0-147

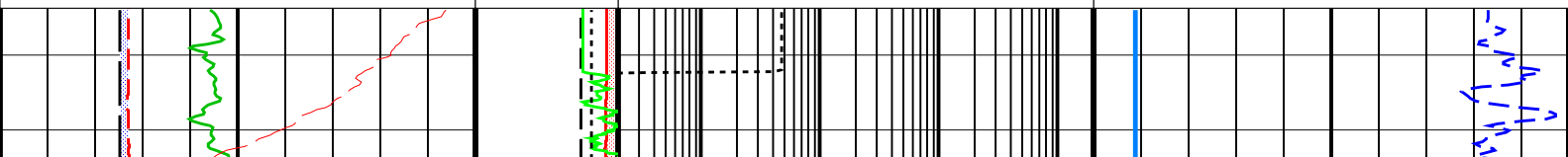
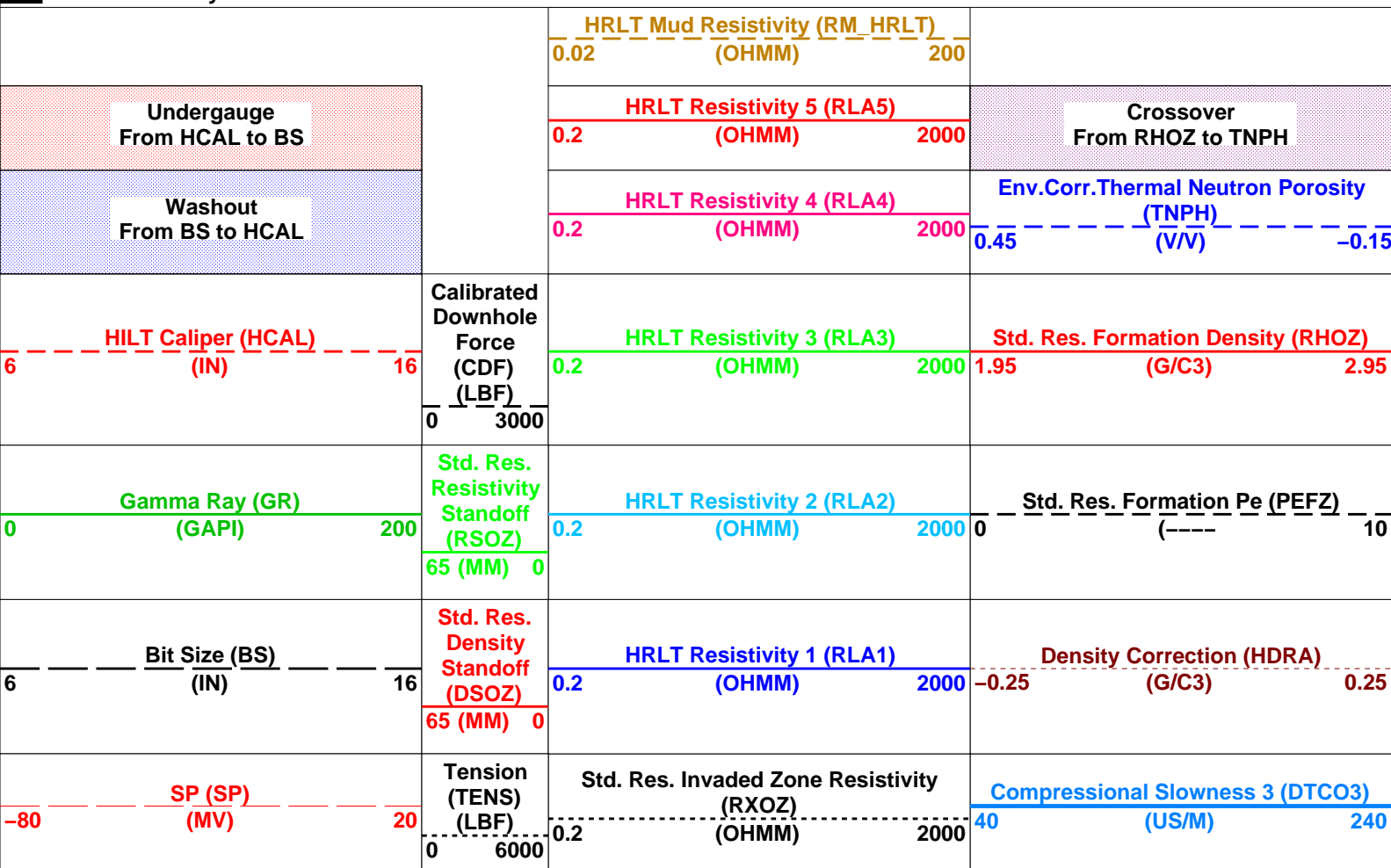
MCM

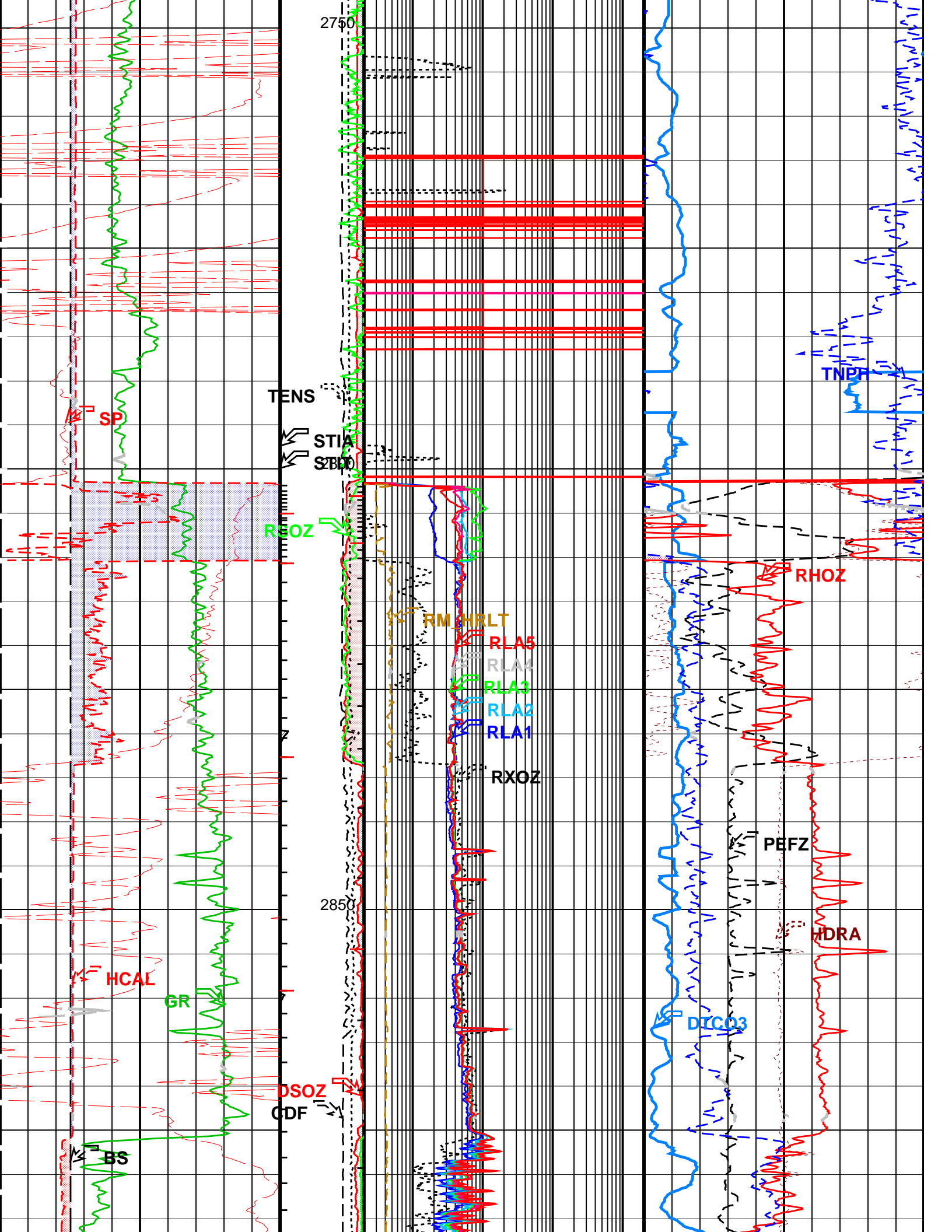
HRLT-B	16C0-147	MAXS-B	SKK-3703-MAST
MAPC-B	SKK-3703-MAST	HILTB-FTB	SRPC-3624-Q2_2008_OP16
HNGC-B	16C0-147	HNGS-BA	SPC-3692-NUCL
EDTC-B	SKK-3494-EDTCB	SPA-A	16C0-147

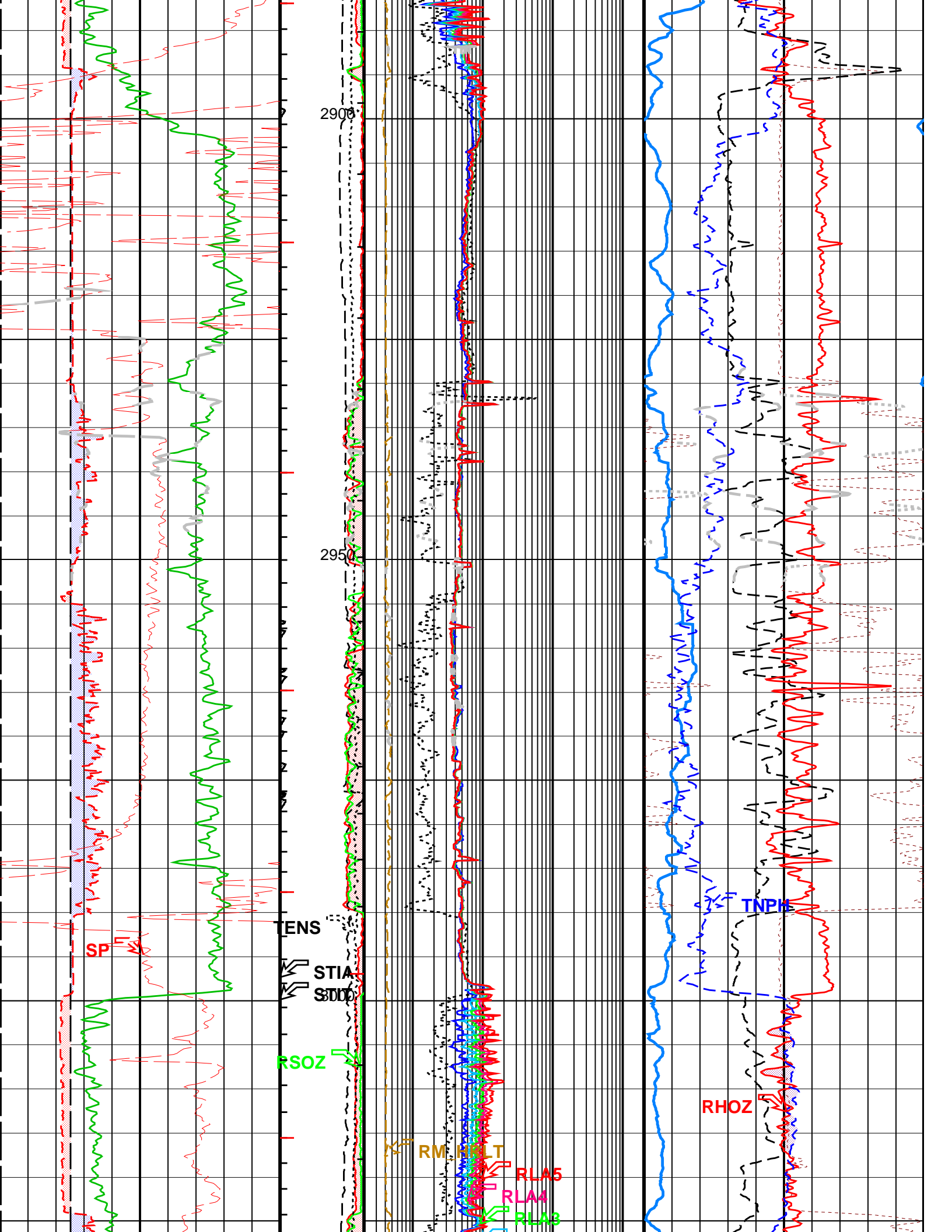
#### PIP SUMMARY

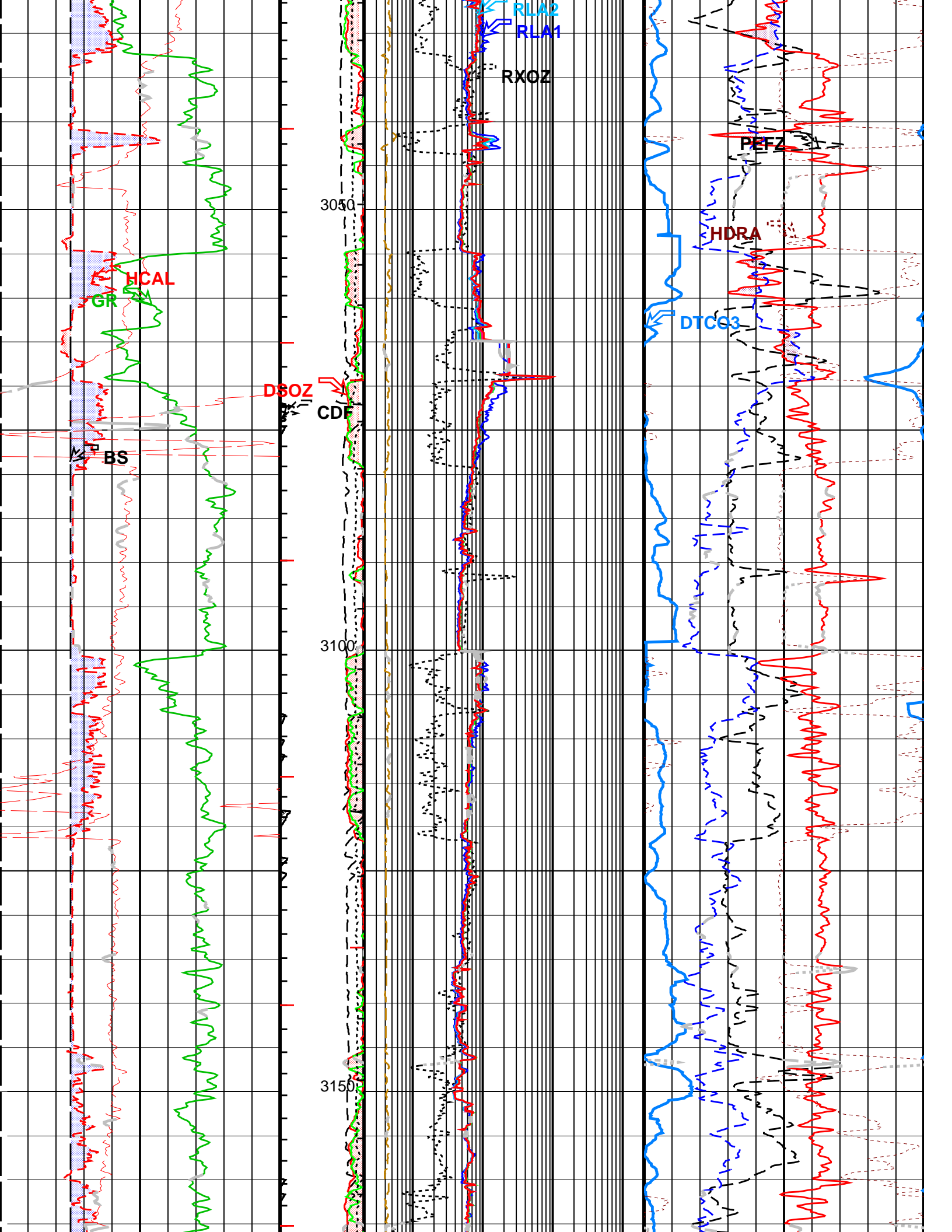
- ┆ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┆ Integrated Hole Volume Major Pip Every 1 M3
- ┆ Integrated Cement Volume Minor Pip Every 0.1 M3
- ┆ Integrated Cement Volume Major Pip Every 1 M3

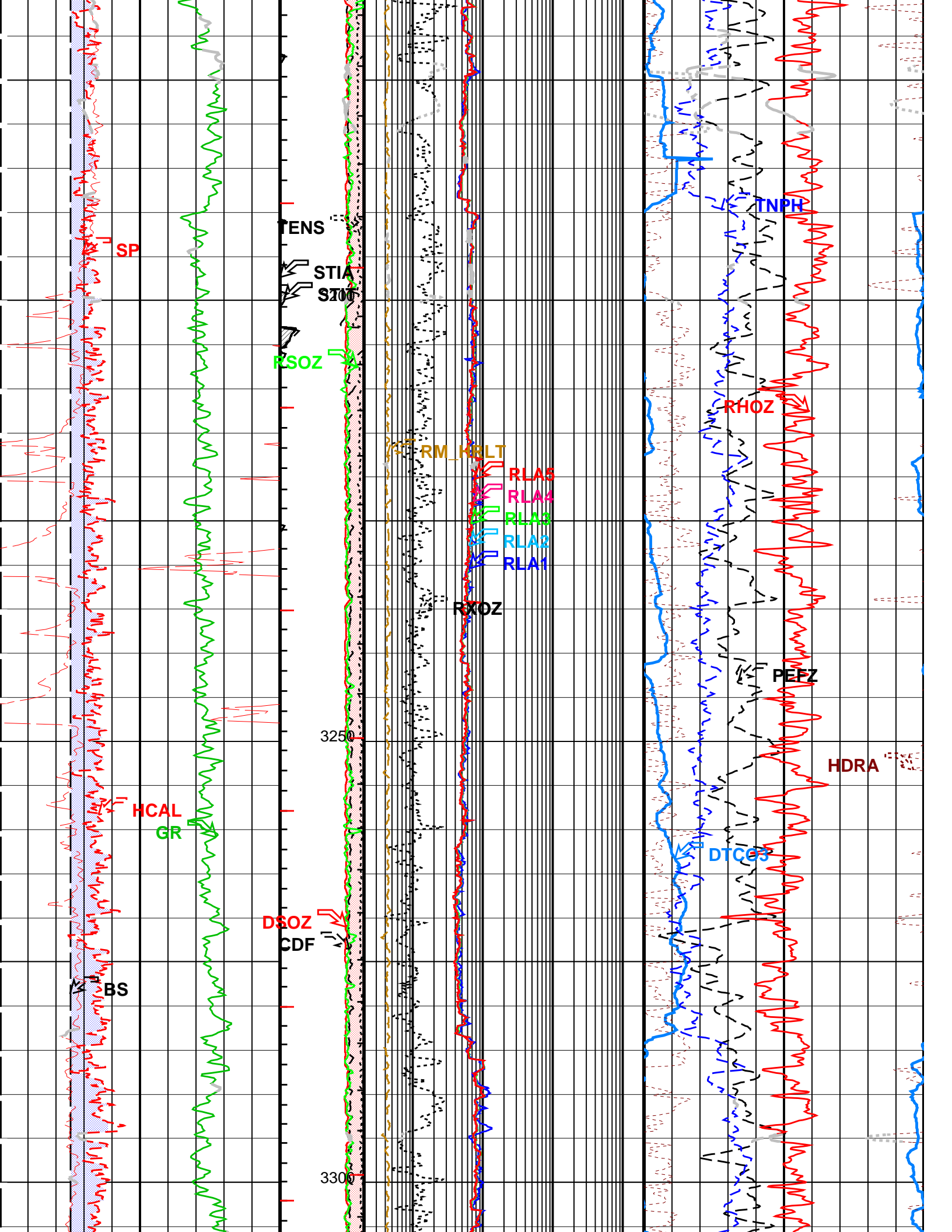
Time Mark Every 60 S

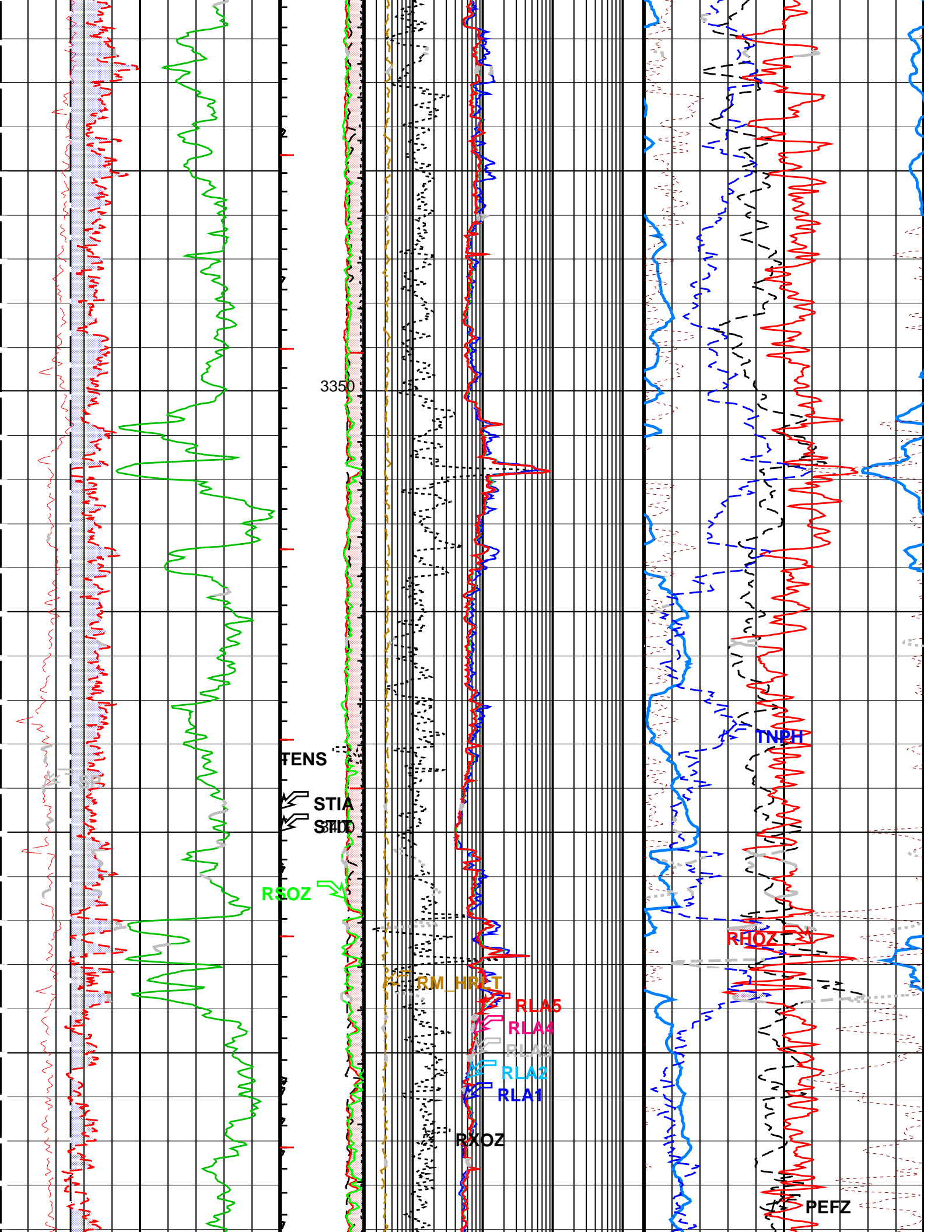


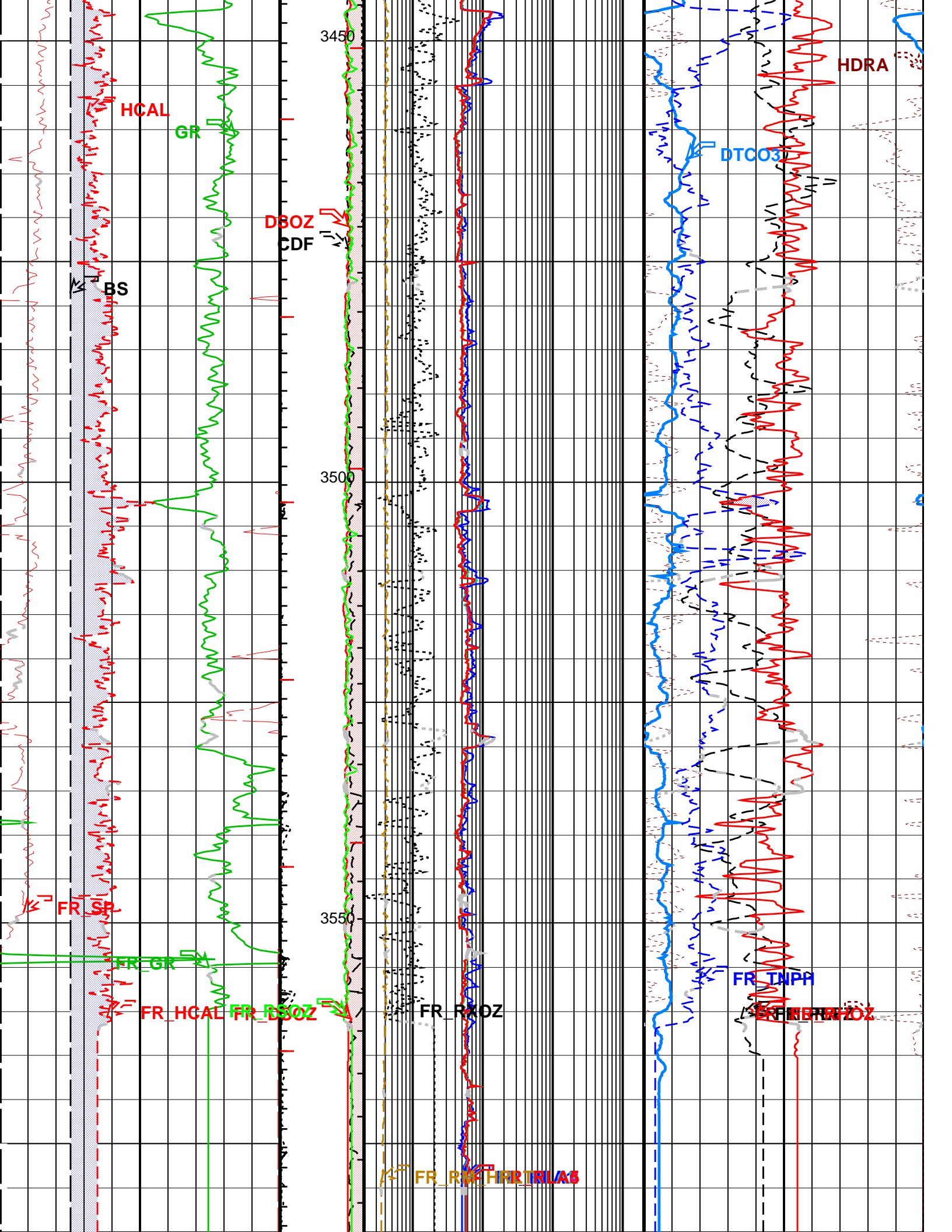












<b>SP (SP)</b> (MV)	<b>Tension (TENS)</b> (LBF)	<b>Std. Res. Invaded Zone Resistivity (RXOZ)</b> (OHMM)	<b>Compressional Slowness 3 (DTCO3)</b> (US/M)
-80      20	0      6000	0.2      2000	40      240
<b>Bit Size (BS)</b> (IN)	<b>Std. Res. Density Standoff (DSOZ)</b> (MM)	<b>HRLT Resistivity 1 (RLA1)</b> (OHMM)	<b>Density Correction (HDRA)</b> (G/C3)
6      16	65 (MM) 0	0.2      2000	-0.25      0.25
<b>Gamma Ray (GR)</b> (GAPI)	<b>Std. Res. Resistivity Standoff (RSOZ)</b> (MM)	<b>HRLT Resistivity 2 (RLA2)</b> (OHMM)	<b>Std. Res. Formation Pe (PEFZ)</b> (----)
0      200	65 (MM) 0	0.2      2000	0      10
<b>HILT Caliper (HCAL)</b> (IN)	<b>Calibrated Downhole Force (CDF)</b> (LBF)	<b>HRLT Resistivity 3 (RLA3)</b> (OHMM)	<b>Std. Res. Formation Density (RHOZ)</b> (G/C3)
6      16	0      3000	0.2      2000	1.95      2.95
<b>Washout</b> From BS to HCAL		<b>HRLT Resistivity 4 (RLA4)</b> (OHMM)	<b>Env.Corr.Thermal Neutron Porosity (TNPH)</b> (V/V)
		0.2      2000	0.45      -0.15
<b>Undergauge</b> From HCAL to BS		<b>HRLT Resistivity 5 (RLA5)</b> (OHMM)	<b>Crossover</b> From RHOZ to TNPH
		0.2      2000	
		<b>HRLT Mud Resistivity (RM_HRLT)</b> (OHMM)	
		0.02      200	

**PIP SUMMARY**

- ┆ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┆ Integrated Hole Volume Major Pip Every 1 M3
- ┆ Integrated Cement Volume Minor Pip Every 0.1 M3
- ┆ Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

**Parameters**

DLIS Name	Description	Value
HRLT-B: High Resolution Laterolog Array - E		
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	108 DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE
CALTEMP	HRLTB Calibration Temperature	93.6995 DEGC
FREQ0	HRLT Frequency Index for Mode 0	32
FREQ1	HRLT Frequency Index for Mode 1	128
FREQ2	HRLT Frequency Index for Mode 2	104
FREQ3	HRLT Frequency Index for Mode 3	86
FREQ4	HRLT Frequency Index for Mode 4	56
FREQ5	HRLT Frequency Index for Mode 5	44
FREQ6	HRLT Frequency Index for Mode 6	116
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
ISSBAR	Barite Mud Switch	BARITE
KFAC_HRLT	HRLT K Factor Option	SONDE
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE
PROCINV	Inversion Selection	ON
PROCRES	Resistivity Selection	NO_EXTERNAL_RES



PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	1.5	IN
PROCMSO	Mechanical Standoff Fin Size			
PROCRM	Processing Mud Resistivity Select	HRLT_Compute		
PROCSPO	Sonde Position	Eccentered		
SHT	Surface Hole Temperature		30	DEGC
MAXS-B: Multimode	Array Sonic Xmitter Sonde			
FIRING_TABLE	MAST Firing Table	** V **		
TX_AMP	Transmitter Amplitude Factor	** V **		
U_CE_CBLG7	CBL Gate Width 7 for Cement Evaluation		80	US
U_CE_CBLG8	CBL Gate Width 8 for Cement Evaluation		80	US
U_CE_NMSG7	Near Minimum Sliding Gate 7 for Cement Evaluation		220	US
U_CE_NMSG8	Near Minimum Sliding Gate 8 for Cement Evaluation		220	US
U_CE_SGDT7	Sliding Gate Delta-T 7 for Cement Evaluation		57	US/F
U_CE_SGDT8	Sliding Gate Delta-T 8 for Cement Evaluation		57	US/F
MAPC-B: Multimode	Array Sonic Power Cartridge			
AZIM_SELECT	Azimuth Reference Selection		P1AZ	
BHS	Borehole Status		OPEN	
BHT	Bottom Hole Temperature (used in calculations)		108	DEGC
BS	Bit Size		8.500	IN
CDTS	C-Delta-T Shale		100	US/F
CE_DCBLSEL	DCBL Selection for Cement Evaluation		3_5FT	
CE_VDLGRA	VDL Manual Gain Rate Array for Cement Evaluation	** V **		
CE_VDLSEL	VDL Selection for Cement Evaluation		MU_5FT	
CE_VDL_MODE	DCBL/VDL Mode for Cement Evaluation		STANDARD	
CE_VFILSWA	VDL Filter Switch Array for Cement Evaluation	** V **		
CLASSAL	Classification Algorithm	** V **		
CRVIN_MF	Alteration Detection Input Number for Monopole Far		DISALLOW	
CRVIN_ML	Alteration Detection Input Number for Monopole Lower		DISALLOW	
CRVIN_MU	Alteration Detection Input Number for Monopole Upper		DISALLOW	
DCRMVL	DC Offset Removal Option		DC_MULTIPLE	
DLHS	Hole Diameter Source for SOBS Channel		AUTO	
DTCO_SELECT	Delta-T Compressional Selection for Finalization		MF	
DTF	Delta-T Fluid		204.5	US/F
DTM	Delta-T Matrix		56	US/F
DTSH_SELECT	Delta-T Shear Selection for Finalization		XD	
DWF7_SPEC	Channel/Station/Azimuth for VDL (DWF7) of Measurement 7		WFA7/9/1	
DWF8_SPEC	Channel/Station/Azimuth for VDL (DWF8) of Measurement 8		WFA8/5/1	
FIRING_TABLE	MAST Firing Table	** V **		
GCSE	Generalized Caliper Selection		HCAL	
GDEV	Average Angular Deviation of Borehole from Normal		0	DEG
GGRD	Geothermal Gradient		0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection		CHART_GEN 9	
GTSE	Generalized Temperature Selection		LINEAR_ESTIMATE	
IMG_DTCO_SEL_MAST	Imaging Input DT Compressional Selection		CONSTANT_DTCO	
IMG_EST_DTCO_MAST	Imaging Estimated DT Compressional		120	US/F
IMG_RBS	Imaging Relative Bearing Selection		RB1	
ISSBAR	Barite Mud Switch		BARITE	
ITTS	Integrated Transit Time Source		DTCO	
MATR	Rock Matrix for Neutron Porosity Corrections		LIMESTONE	
NFPI_ML	Free Pipe Amplitude for ML		0	
NFPI_MU	Free Pipe Amplitude for MU		0	
NRSA	Number of Receivers in Sub-Array	** V **		
RBC	Relative Bearing Correction Allow/Disallow		DISALLOW	
ROTIN_XD	Alford Rotation X Dipole Measurement Number		DISALLOW	
ROTIN_YD	Alford Rotation Y Dipole Measurement Number		DISALLOW	
ROTWINDOW_CTRL	Alford Rotation Window Control		ON	
ROT_AI	Dipole Waveform Rotation Averaging Depth Interval		0	M
ROT_FIL LENG	Alford Rotation Filter Length		0	
ROT_TWD	Alford Rotation Window Time Width		0	US
ROT_TWO	Alford Rotation Window Time Offset		0	US
ROT_XFH	Alford Rotation Filter High Cutoff		0	HZ
ROT_XFL	Alford Rotation Filter Low Cutoff		0	HZ
SHT	Surface Hole Temperature		30	DEGC
SPFS	Sonic Porosity Formula		RAYMER_HUNT	
SPSO	Sonic Porosity Source		DTCO	
STCAL	STC Algorithm	** V **		
STCSEL1	Station Selection for STC for Measurement 1	** V **		
STCSEL2	Station Selection for STC for Measurement 2	** V **		
STCSEL3	Station Selection for STC for Measurement 3	** V **		
STCSEL4	Station Selection for STC for Measurement 4	** V **		
STCSEL5	Station Selection for STC for Measurement 5	** V **		
STCSEL6	Station Selection for STC for Measurement 6	** V **		
STCSEL_FAST	Station Selection for STC for DT_FAST	** V **		
STCSEL_SLOW	Station Selection for STC for DT_SLOW	** V **		
TRMIN	Alteration Detection Minimum Transmitter Receiver Spacing for Processing		3.0	FT
TX_AMP	Transmitter Amplitude Factor	** V **		
U_CE_CBLG7	CBL Gate Width 7 for Cement Evaluation		80	US
U_CE_CBLG8	CBL Gate Width 8 for Cement Evaluation		80	US
U_CE_NMSG7	Near Minimum Sliding Gate 7 for Cement Evaluation		220	US
U_CE_NMSG8	Near Minimum Sliding Gate 8 for Cement Evaluation		220	US
U_CE_SGDT7	Sliding Gate Delta-T 7 for Cement Evaluation		57	US/F
U_CE_SGDT8	Sliding Gate Delta-T 8 for Cement Evaluation		57	US/F
U_SLL1_MAST	MAST DSTC Slowness Lower Limit 1		0	US/F
U_SLL2_MAST	MAST DSTC Slowness Lower Limit 2		0	US/F

U_SLL3_MAST	MAST DSTC Slowness Lower Limit 3	40	US/F
U_SLL4_MAST	MAST DSTC Slowness Lower Limit 4	0	US/F
U_SLL5_MAST	MAST DSTC Slowness Lower Limit 5	80	US/F
U_SLL6_MAST	MAST DSTC Slowness Lower Limit 6	80	US/F
U_SLL_FAST_MAST	MAST DSTC Slowness Lower Limit Fast	0	US/F
U_SLL_SLOW_MAST	MAST DSTC Slowness Lower Limit Slow	0	US/F
U_SUL1_MAST	MAST DSTC Slowness Upper Limit 1	0	US/F
U_SUL2_MAST	MAST DSTC Slowness Upper Limit 2	0	US/F
U_SUL3_MAST	MAST DSTC Slowness Upper Limit 3	240	US/F
U_SUL4_MAST	MAST DSTC Slowness Upper Limit 4	0	US/F
U_SUL5_MAST	MAST DSTC Slowness Upper Limit 5	540	US/F
U_SUL6_MAST	MAST DSTC Slowness Upper Limit 6	540	US/F
U_SUL_FAST_MAST	MAST DSTC Slowness Upper Limit Fast	0	US/F
U_SUL_SLOW_MAST	MAST DSTC Slowness Upper Limit Slow	0	US/F
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	108	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GRGD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	20	DEGC
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSSO	HRDD Nuclear Source Strength Option	NORMAL	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	BARI	
MDEN	Matrix Density	2.71	G/C3
MHC0	MCFL B0 Contrast Correction Coefficient	2.2e-005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e-005	OHMS
MHCC	MCFL High Contrast Correction Switch	NO	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	BARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PEA_FILTER	PEA Filter	NO_FILTER	
PEFC_FILTER	PEFC Filter	NO_FILTER	
PHIMAX	HILT max porosity	35	PU
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	30	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	NO	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	0.972506	
BAR2	HNGS Detector 2 Barite Constant	0.971764	
BHK	HNGS Borehole Potassium Correction Concentration	0.0269102	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	108	DEGC
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	USER	
GCSE	Generalized Caliper Selection	HCAL	

GCSE	Generalized Caliper Selection	HCAL	0	DEG
GDEV	Average Angular Deviation of Borehole from Normal			DC/M
GGRD	Geothermal Gradient		0.018227	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW		
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW		
HABK	HNGS Borehole Potassium Running Average		0.0284296	
HALF	HNGS Alpha Filter Length		60	IN
HCRB	HNGS Apply Borehole Potassium Correction	USER		
HMWM	Mud Weighting Material	NATU		
HNPE	HNGS Processing Enable	YES		
ISSBAR	Barite Mud Switch	BARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE		
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate		0.4	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate		1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES		
SHT	Surface Hole Temperature		30	DEGC
TPOS	Tool Position	ECCE		
VBA1	HNGS Detector 1 Variable Barite Factor Running Average		0.94848	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average		0.953954	
EDTC-B: Enhanced DTS Cartridge				
BHFL	Borehole Fluid Type	WATER		
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)		108	DEGC
BSCO	Borehole Salinity Correction Option	YES		
CCCO	Casing & Cement Thickness Correction Option	NO		
DPPM	Density Porosity Processing Mode	HIRS		
FSCO	Formation Salinity Correction Option	NO		
GCSE	Generalized Caliper Selection	HCAL		
GDEV	Average Angular Deviation of Borehole from Normal		0	DEG
GGRD	Geothermal Gradient		0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
HSCO	Hole Size Correction Option	YES		
ISSBAR	Barite Mud Switch	BARITE		
ISSBAR_EDTC	Nuclear Mud Type	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE		
MCCO	Mud Cake Correction Option	YES		
MCOR	Mud Correction	BARI		
MWCO	Mud Weight Correction Option	YES		
PTCO	Pressure/Temperature Correction Option	YES		
SDAT	Standoff Data Source	SOCN		
SHT	Surface Hole Temperature		30	DEGC
SOCN	Standoff Distance		0.125	IN
SOCO	Standoff Correction Option	NO		
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered		
SPA-A: SP ADAPTOR				
SPNV	SP Next Value		0	MV
DIR: Directional Survey Computation				
SPED	East Departure of Starting Point		0	M
SPND	North Departure of Starting Point		0	M
SPVD	TVD of Starting Point		0	M
TAZI	Vertical Section Azimuth		0	DEG
TIED	East Departure of Tie-in Point		0	M
TIMD	Along-hole depth of Tie-in Point		0	M
TIND	North Departure of Tie-in Point		0	M
TIVD	TVD of Tie-in Point		0	M
HOLEV: Integrated Hole/Cement Volume				
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)		108	DEGC
FCD	Future Casing (Outer) Diameter		7	IN
GCSE	Generalized Caliper Selection	HCAL		
GDEV	Average Angular Deviation of Borehole from Normal		0	DEG
GGRD	Geothermal Gradient		0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
HVCS	Integrated Hole Volume Caliper Selection	HCAL		
ISSBAR	Barite Mud Switch	BARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE		
SHT	Surface Hole Temperature		30	DEGC
STI: Stuck Tool Indicator				
LBFR	Trigger for MAXIS First Reading Label	TDL		
STKT	STI Stuck Threshold		0.762	M
TDD	Total Depth - Driller		3585.00	M
TDL	Total Depth - Logger		3586.50	M
System and Miscellaneous				
ALDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth		
BSAL	Borehole Salinity		69300.00	PPM
CSIZ	Current Casing Size		9.625	IN
CWEI	Casing Weight		53.50	LB/F
DFD	Drilling Fluid Density		10.60	LB/G
DO	Depth Offset for Playback		4.5	M
FLEV	Fluid Level		-50000.00	M
MST	Mud Sample Temperature		74.30	DEGF

PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.0870	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	11766.7	FT
TWS	Temperature of Connate Water Sample	104.78	DEGF

Format: Combo\_500\_StdRes      Vertical Scale: 1:500      Graphics File Created: 08-Jan-2009 08:34

**OP System Version: 16C0-147**  
MCM

HRLT-B	16C0-147	MAXS-B	SKK-3703-MAST
MAPC-B	SKK-3703-MAST	HILTB-FTB	SRPC-3624-Q2_2008_OP16
HNGC-B	16C0-147	HNGS-BA	SPC-3692-NUCL
EDTC-B	SKK-3494-EDTCB	SPA-A	16C0-147

**Input DLIS Files**

DEFAULT	HRLA_MAXS_MAPC_TLD_056LUP FN:64	PRODUCER	08-Jan-2009 03:46	3584.4 M	2732.2 M
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**Output DLIS Files**

DEFAULT	HRLA_MAXS_MAPC_TLD_068PUP FN:79	PRODUCER	08-Jan-2009 08:34		
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