

[illegible]

Company: **Essential Petroleum Resources Limited**

Well: Findra-1

Field: **PEP 159**

Rig: Hunt Rig #2

Country: **Australia**

HALS-BHC-PEX-HNGS
Resistivity-Sonic Print
Scale 1:500

Otway Basin PEP 159
602241.4 E
5768896.5 N

Elev.:	K.B.	60.95 m
	G.L.	57 m
	D.F.	60.95 m

Permanent Datum: MEAN SEA LEVELElev.: 0 m

Log Measured From: DRILL FLOOR

61.0 m above Perm. Datum

Drilling Measured From: DRILL FLOOR

Field: PEP 159
Location: Otway Basin PEP 159
Well: Findra-1
Company: Essential Petroleum Re

<h1>HALS-BHC-PEX-HNGS</h1> <h2>Resistivity-Sonic Print</h2> <h3>Scale 1:500</h3>			
LOCATION			
Otway Basin PEP 159 602241.4 E 5768896.5 N	Elev.: K.B. 60.95 m G.L. 57 m D.F. 60.95 m		
Permanent Datum: _____ Log Measured From: _____ Drilling Measured From: _____	MEAN SEA LEVEL _____ DRILL FLOOR _____ DRILL FLOOR _____	Elev.: 0 m _____ 61.0 m above Perm. Datum	
State: Victoria	Max. Well Deviation 2 deg	Longitude 142° 10' 04.90" E	Latitude 38° 13' 19.58" S

[illegible]

Logging Date	30-Jun-2004					
Run Number	1					
Depth Driller	889 m					
Schlumberger Depth	879 m					
Bottom Log Interval	876.71 m					
Top Log Interval	150 m					
Casing Driller Size @ Depth	9.625 in @ 150 m					
Casing Schlumberger	150 m					
Bit Size	8.500 in					
Type Fluid In Hole	KCl-Polymer-PHPA					
Density	Viscosity					
Fluid Loss	PH					
Source Of Sample	PIT					
RM @ Measured Temperature	0.254 ohm.m		@	12 degC		@
RMF @ Measured Temperature	0.205 ohm.m		@	12 degC		@
RMC @ Measured Temperature	0.281 ohm.m		@	12 degC		@
Source RMF	RMC					
RM @ MRT	RMF @ MRT					
Maximum Recorded Temperatures	48 degC		48	48		@
Circulation Stopped	Time					
Logger On Bottom	Time					
Unit Number	Location					
Recorded By	Herdy Nizar / G. Jonsson					
Witnessed By	G. Wakelin-King					

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			
Density	Viscosity		
Fluid Loss	PH		
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 4

Date Created: 30-JUN-2004 20:20:16

Logging Cable

Type:	7-42V-XS
Serial Number:	78197
Length:	4500.07 M
Conveyance Method:	Wireline
Rig Type:	LAND

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	60.39 M
Rig Up Length At Bottom:	60.32 M
Rig Up Length Correction:	0.07 M
Stretch Correction:	0.20 M
Tool Zero Check At Surface:	0.50 M

1. This is first run in hole
2. Schlumberger depth control procedures were followed
3. IDW is the primary depth control
4. Z chart is the secondary depth control
- 5.
- 6.

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 SERVICES2

OS1:

OS2:

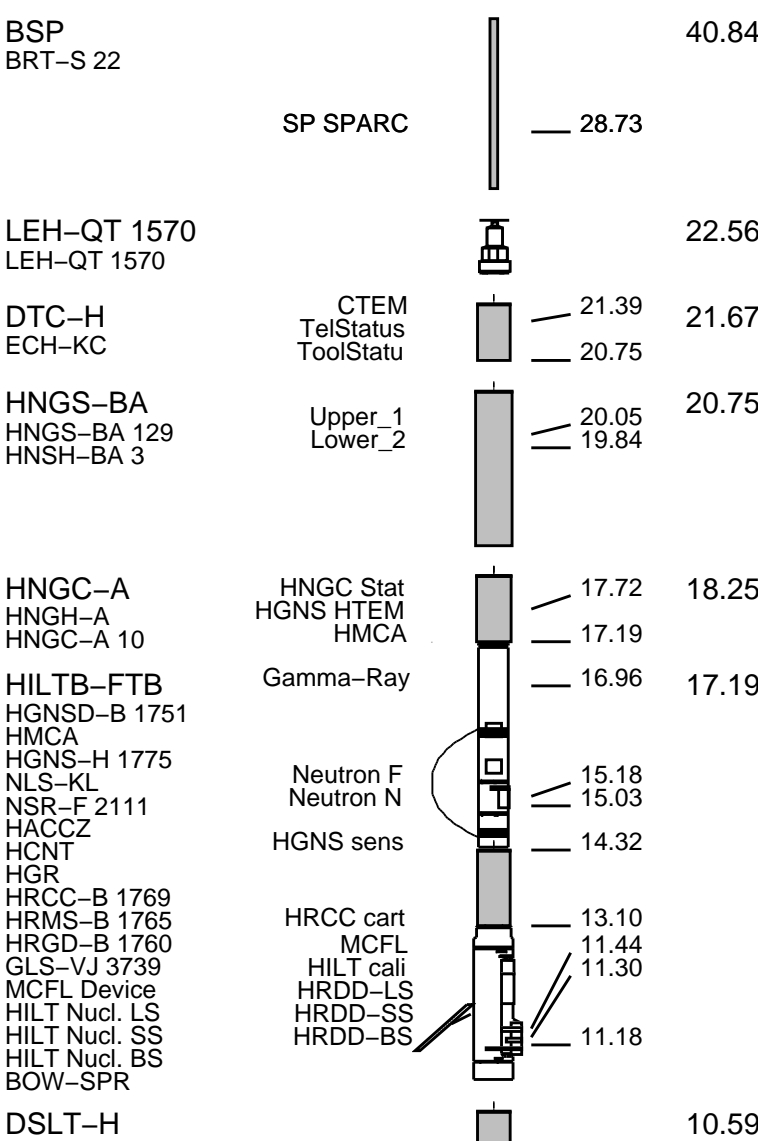
OS3:

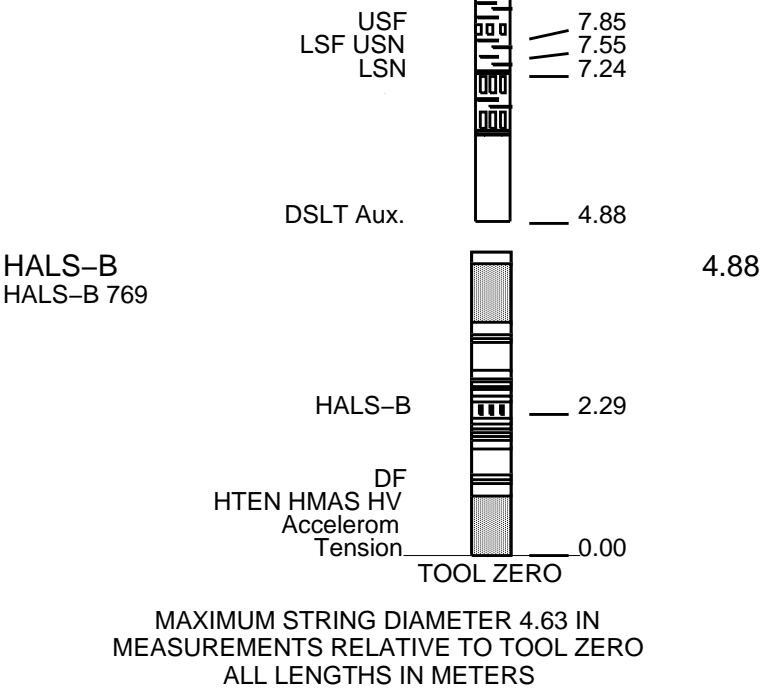
OS4:

OS5:

REMARKS: RUN NUMBER 2

g bowspring

Maximum recorded temperature of 48 degC from thermometers in LEH-QT					
Caliper check in casing reads 8.83 from ASCII and 8.834 expected.					
Additional mud information:					
Chloride: 19000 mg/L, Calicium: 40mg/L, Potassium: 21,076 mg/L, KCL: 3.9%					
Barite present in mud					
RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
10C0-306					
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP
EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		
SURFACE EQUIPMENT					
LCM-AA 2747		NCS-VB			
GSR-U/Y		GSR-U			
NCT-B		WITM (DTS)-A			
CNB-AB					
DOWNHOLE EQUIPMENT					
					
BSP			40.84		
BRT-S 22					
SP SPARC			28.73		
LEH-QT 1570			22.56		
LEH-QT 1570					
DTC-H		CTEM	21.39	21.67	
ECH-KC		TelStatus	20.75		
		ToolStatu			
HNGS-BA		Upper_1	20.05	20.75	
HNGS-BA 129		Lower_2	19.84		
HNSH-BA 3					
HNGC-A		HNGC Stat	17.72	18.25	
HNGH-A		HGNS HTEM	17.19		
HNGC-A 10		HMCA			
HILTB-FTB		Gamma-Ray	16.96	17.19	
HGNSD-B 1751					
HMCA					
HGNS-H 1775		Neutron F	15.18		
NLS-KL		Neutron N	15.03		
NSR-F 2111					
HACCZ		HGNS sens	14.32		
HCNT					
HGR					
HRCC-B 1769		HRCC cart	13.10		
HRMS-B 1765		MCFL	11.44		
HRGD-B 1760		HILT cali	11.30		
GLS-VJ 3739		HRDD-LS			
MCFL Device		HRDD-SS			
HILT Nucl. LS		HRDD-BS	11.18		
HILT Nucl. SS					
HILT Nucl. BS					
BOW-SPR					
DSLT-H			10.59		
DSLCL-HA 8223					

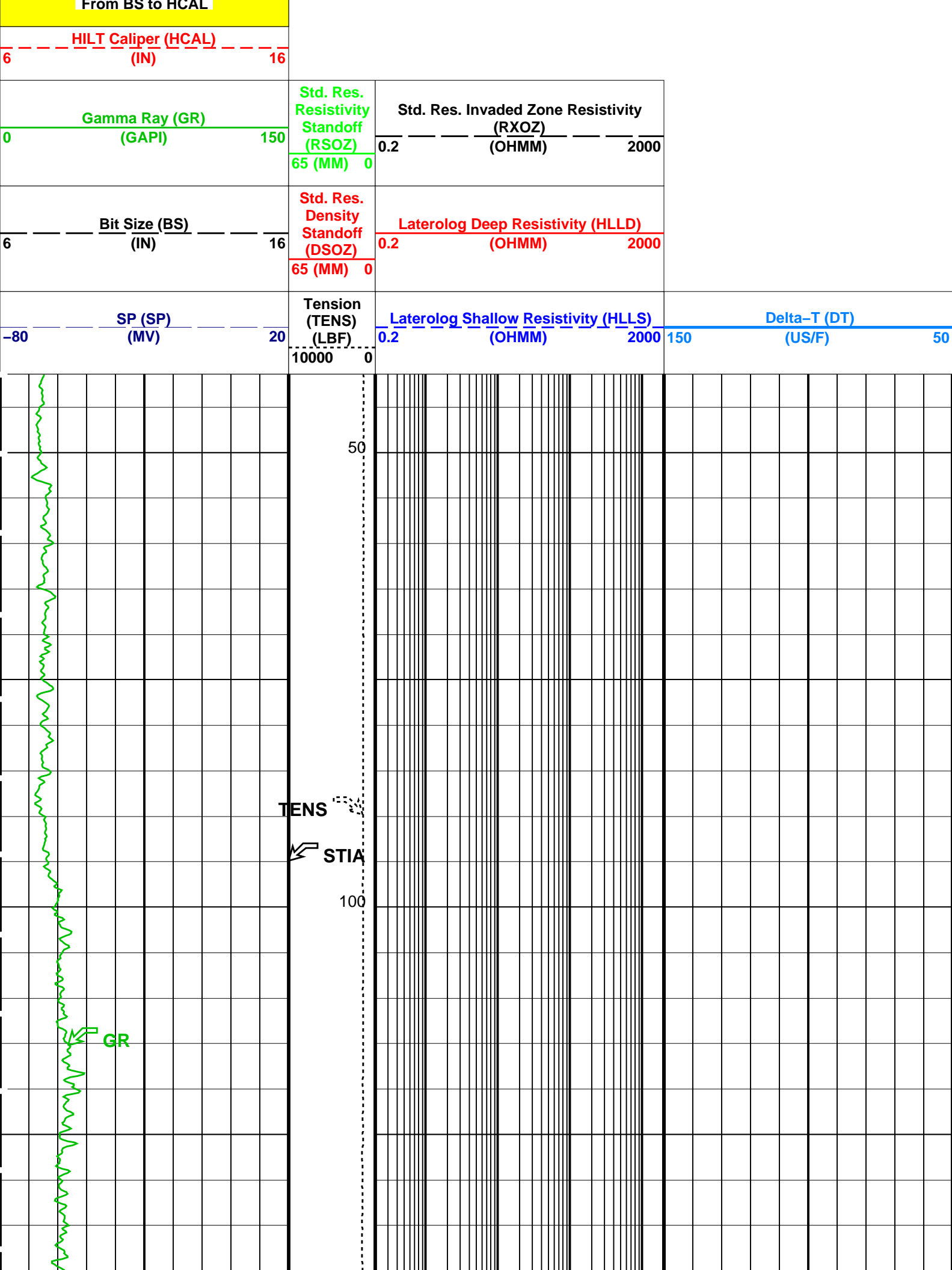


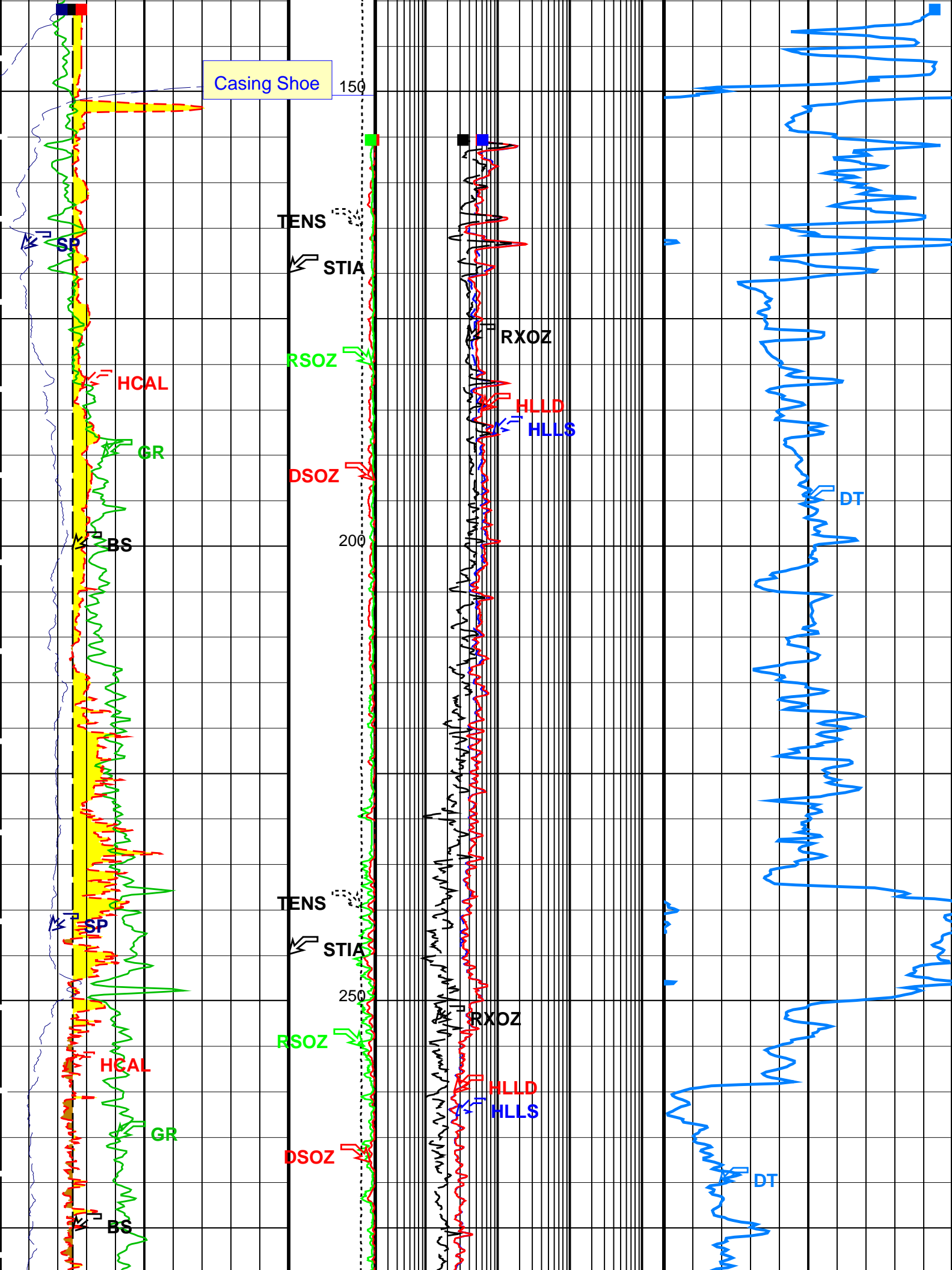
Client: Essential Petroleum Resources Limited
Well: Findra-1
Field: PRP 159
State: Victoria
Country: Australia

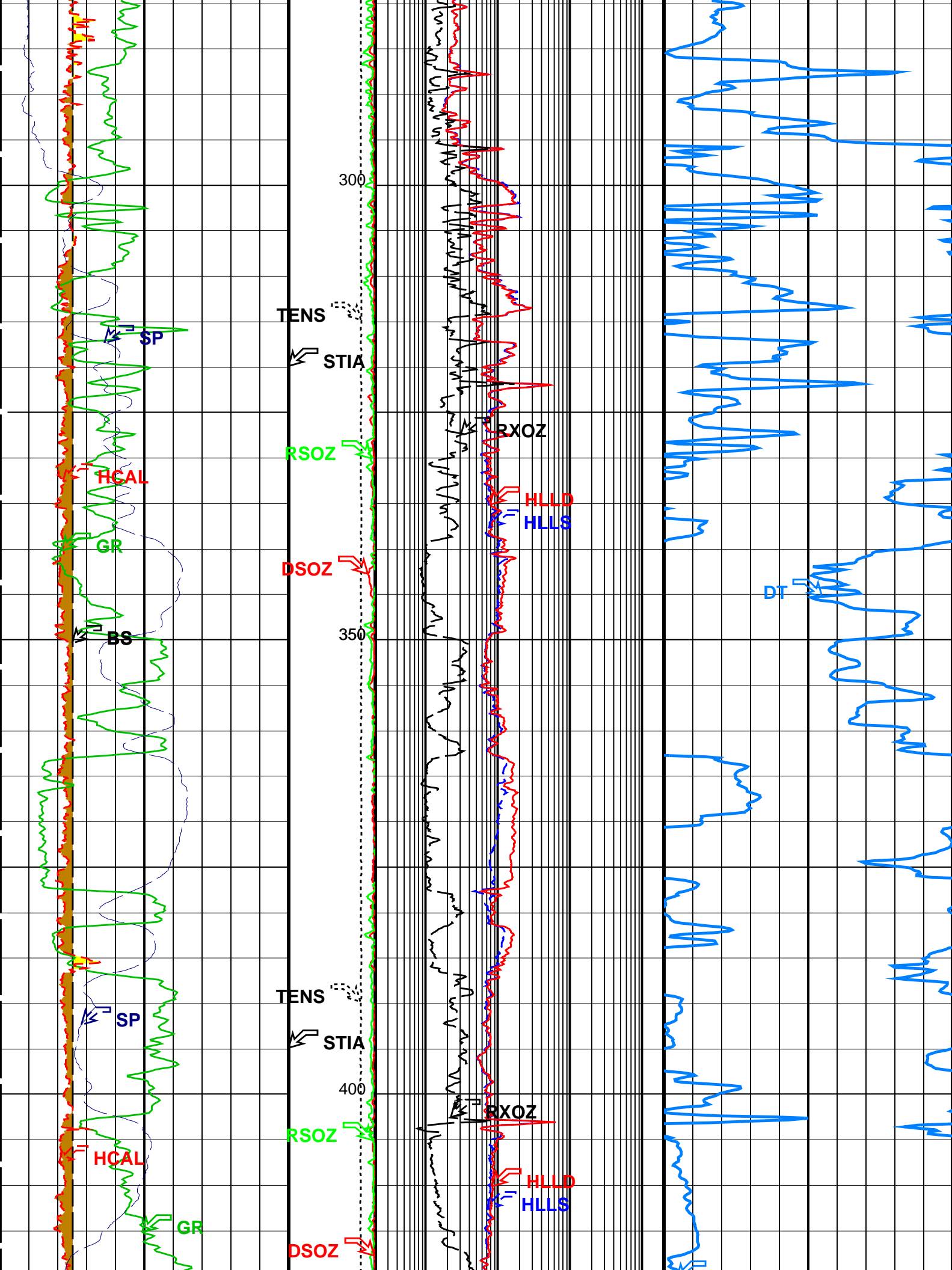
Drawing Date: 6/30/2004
API #:

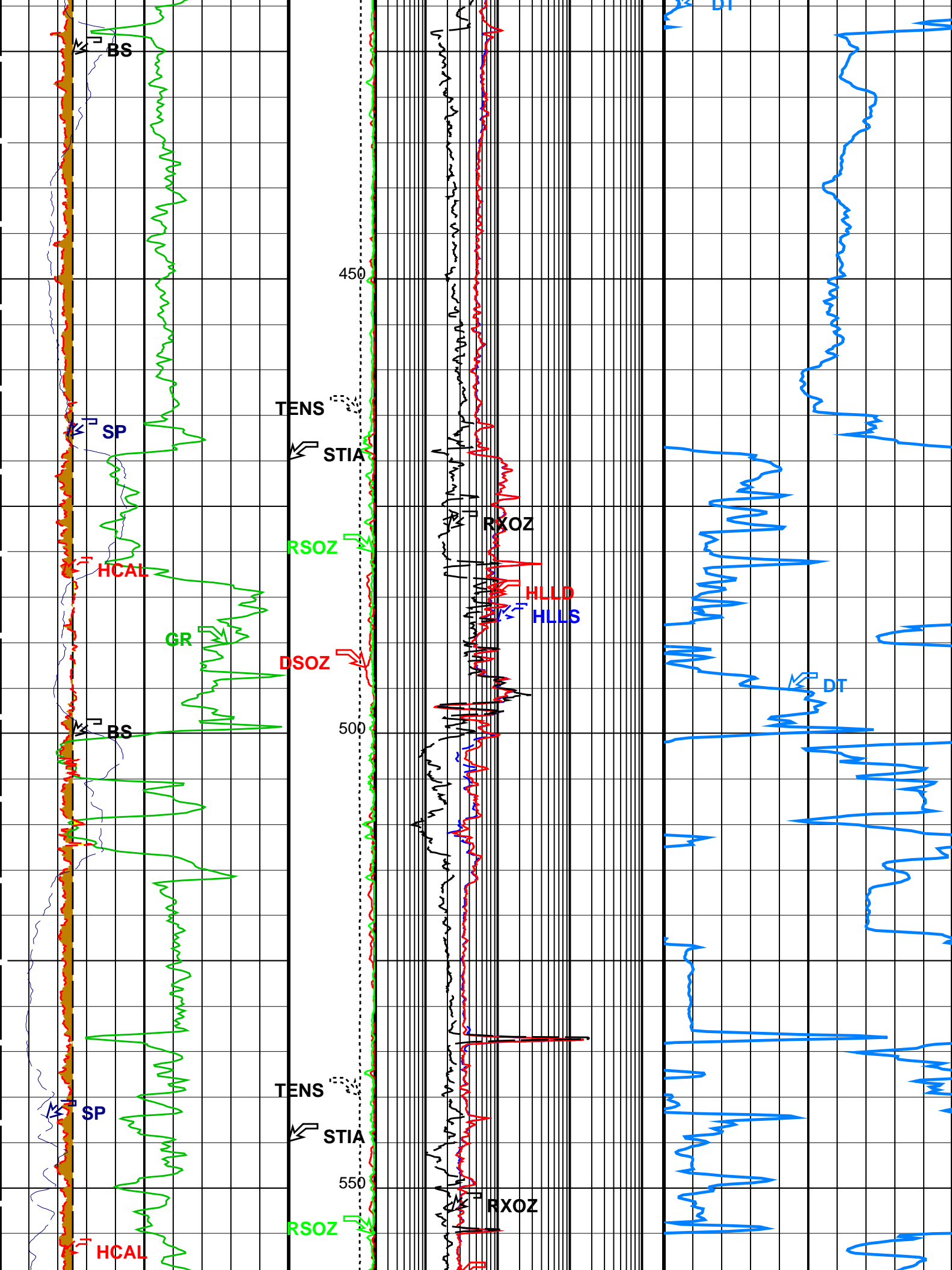
Rig Name: Hunt Rig # 2
Reference Datum: Mean Sea Level
Elevation: 61.0 m

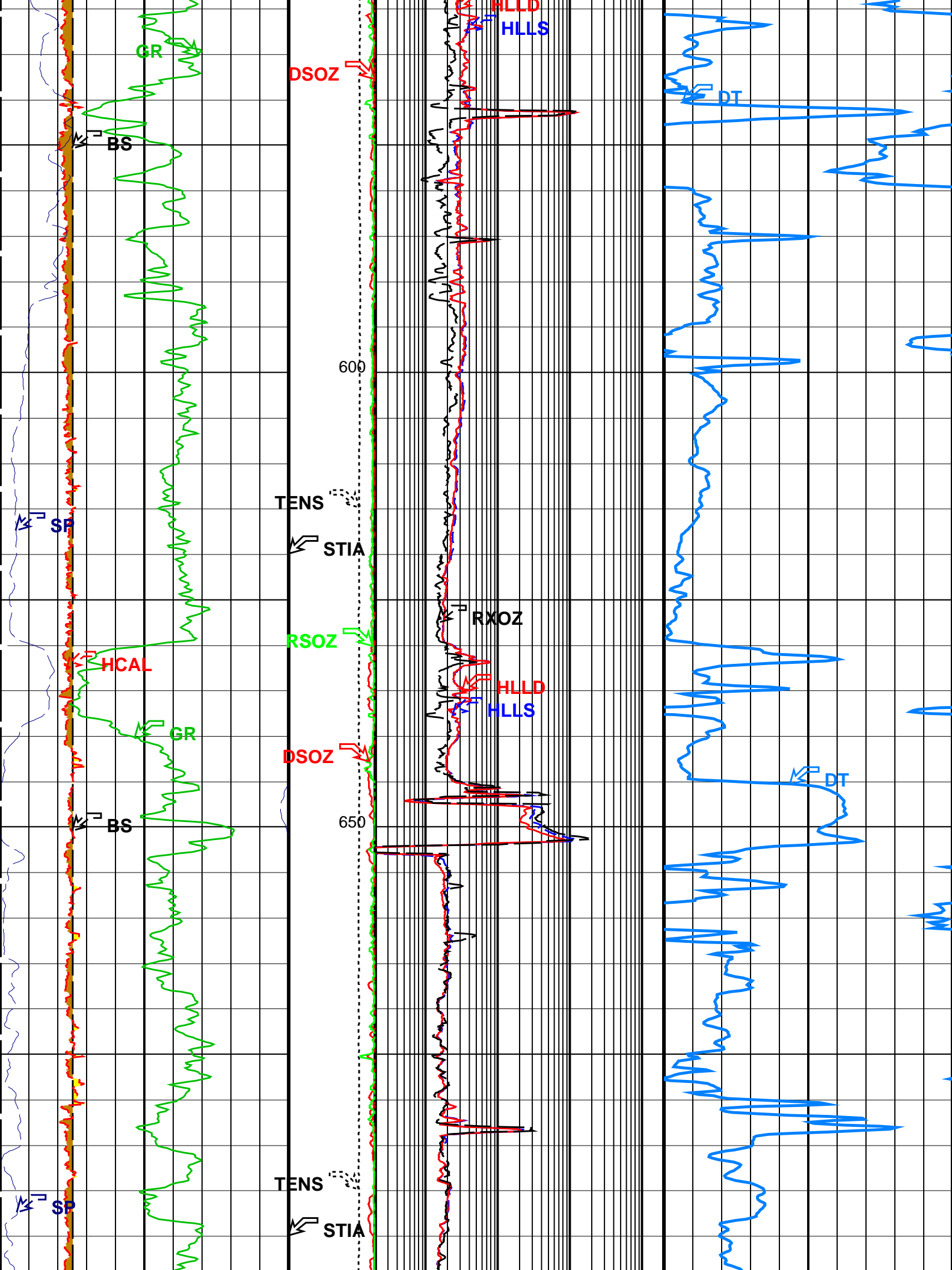
Production String	(in)		(m)	Well Schematic	(m)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
					0.0	17.500		Borehole Segment
					61.0	13.375		Casing Shoe
					150.0	9.625		Casing Shoe

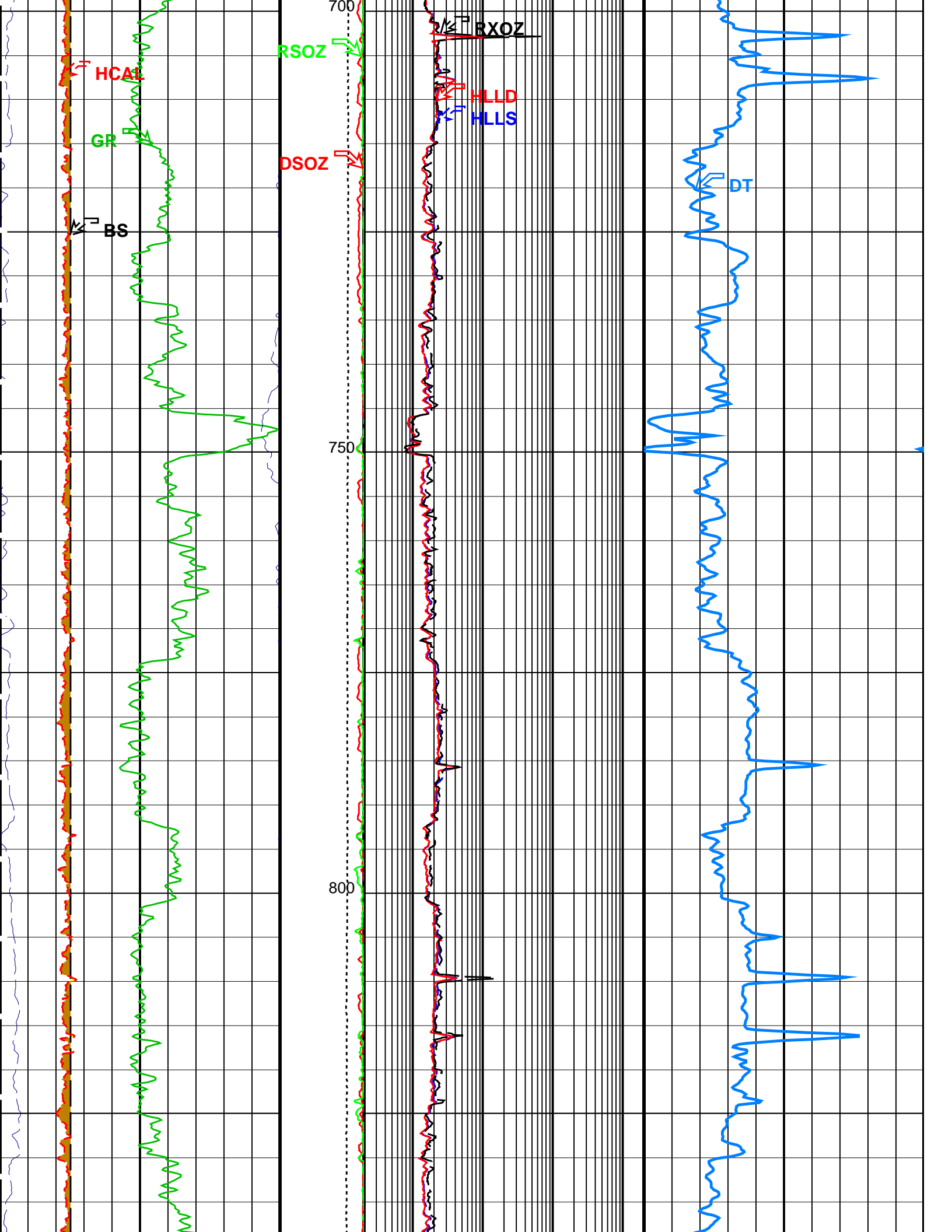


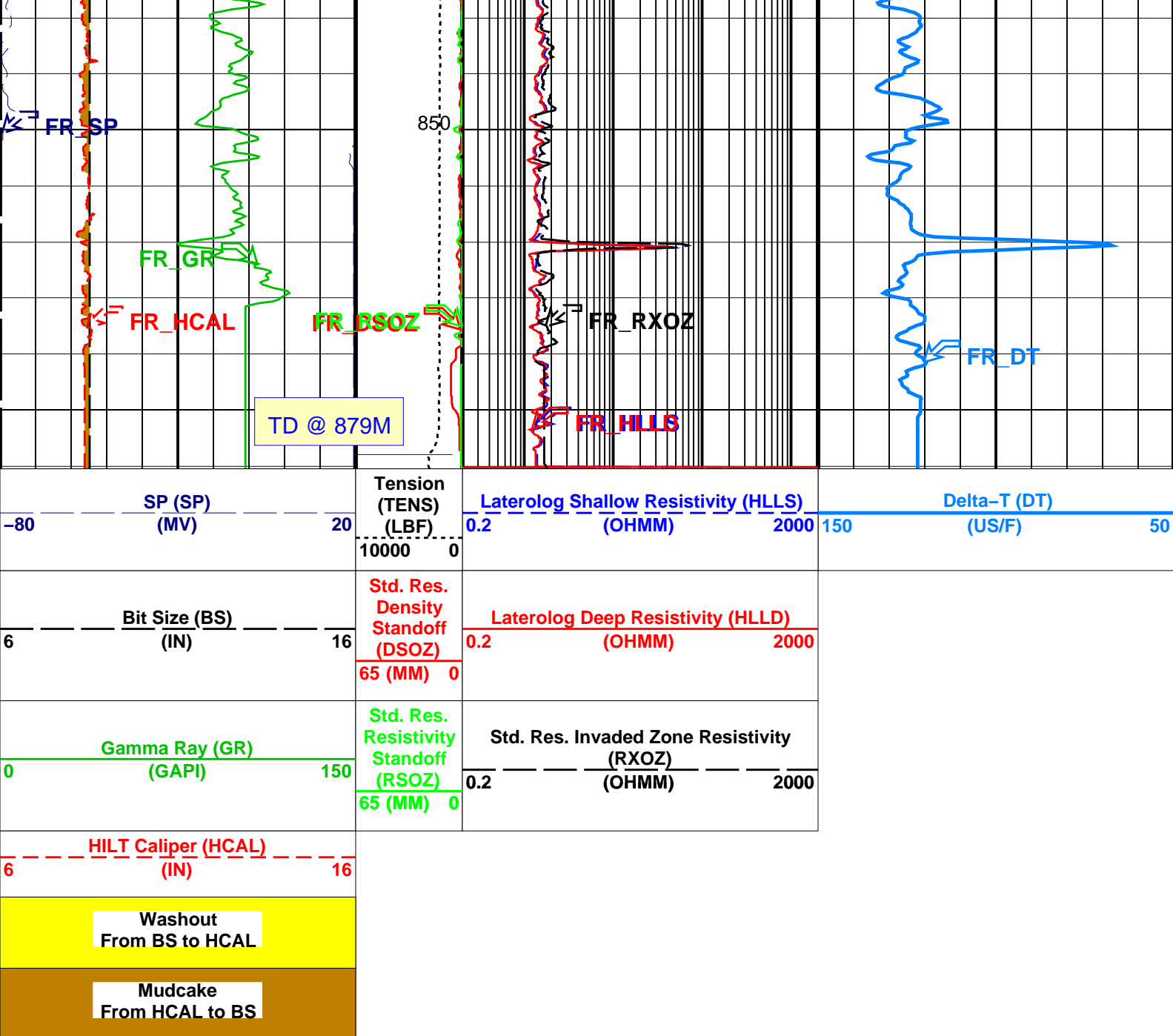












PIP SUMMARY

Time Mark Every 60 S

Parameters

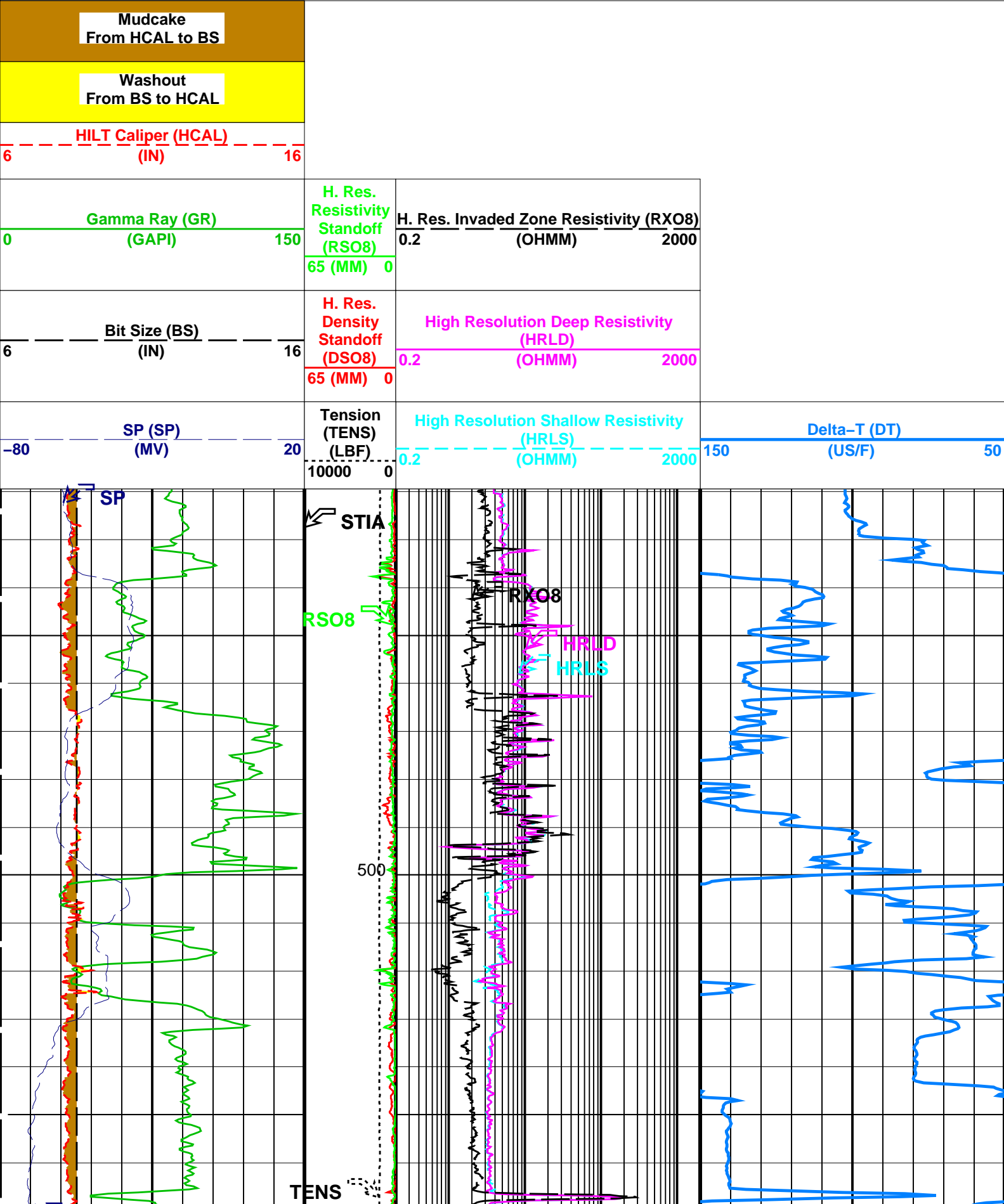
DLIS Name	Description	Value	
HALS-B: HILT Azimuthal Laterolog Sonde B			
	HALS Type of Image	Conductivities	
ARIP_LTS	HALS Long Tool String Correction	OFF	
ARIP_SHOULDER	HALS Shoulder Correction	OFF	
BHCC	HALS Borehole Correction	ON	
BHT	Bottom Hole Temperature (used in calculations)	48	DEGC
DHOP	Diameter & Eccentering used in HALS Borehole Corrections	Caliper_Eccentered	
GRCC	HALS Groningen Correction	OFF	
HMSO	HALS Mechanical Standoff	1.5	IN
TCOR	HALS TLC Correction	OFF	
UNSPK	HALS Despiking Filter Option	OFF	
UNSPK_THOLD	HALS Despiking Filter Threshold (in %)	20	%
UNSPK_WINDOW	HALS Despiking Filter Window (inches)	6	IN
DSLT-H: Digitizing Sonic Logging Tool			
	Telemetry Mode	DSLC_FTB	
	DSLT Firing Mode	SDDB	
DDEL	Digitizing Delay	0	US
DFAD_TYPE	DFAD type	DFAD2	

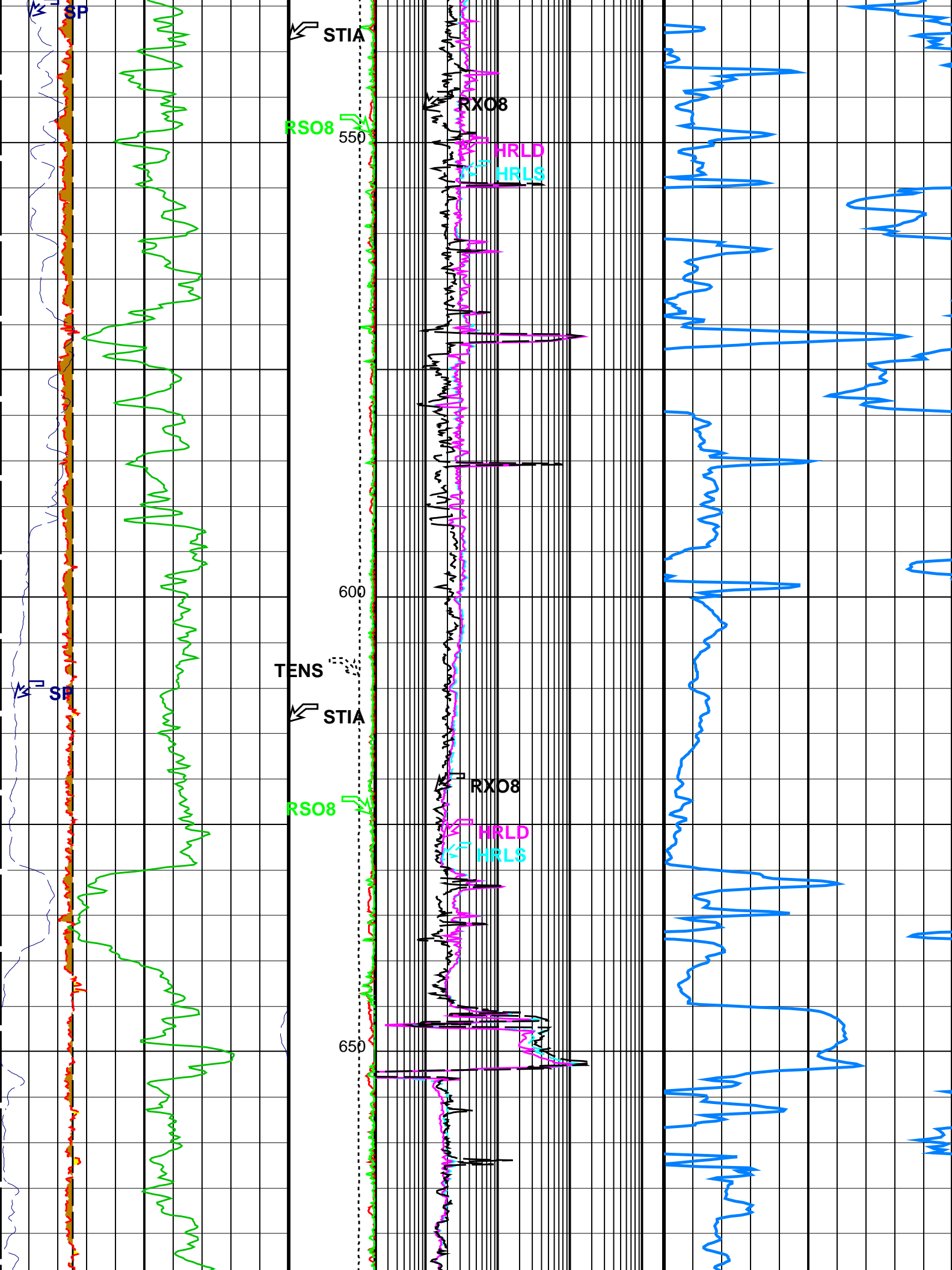
MCM

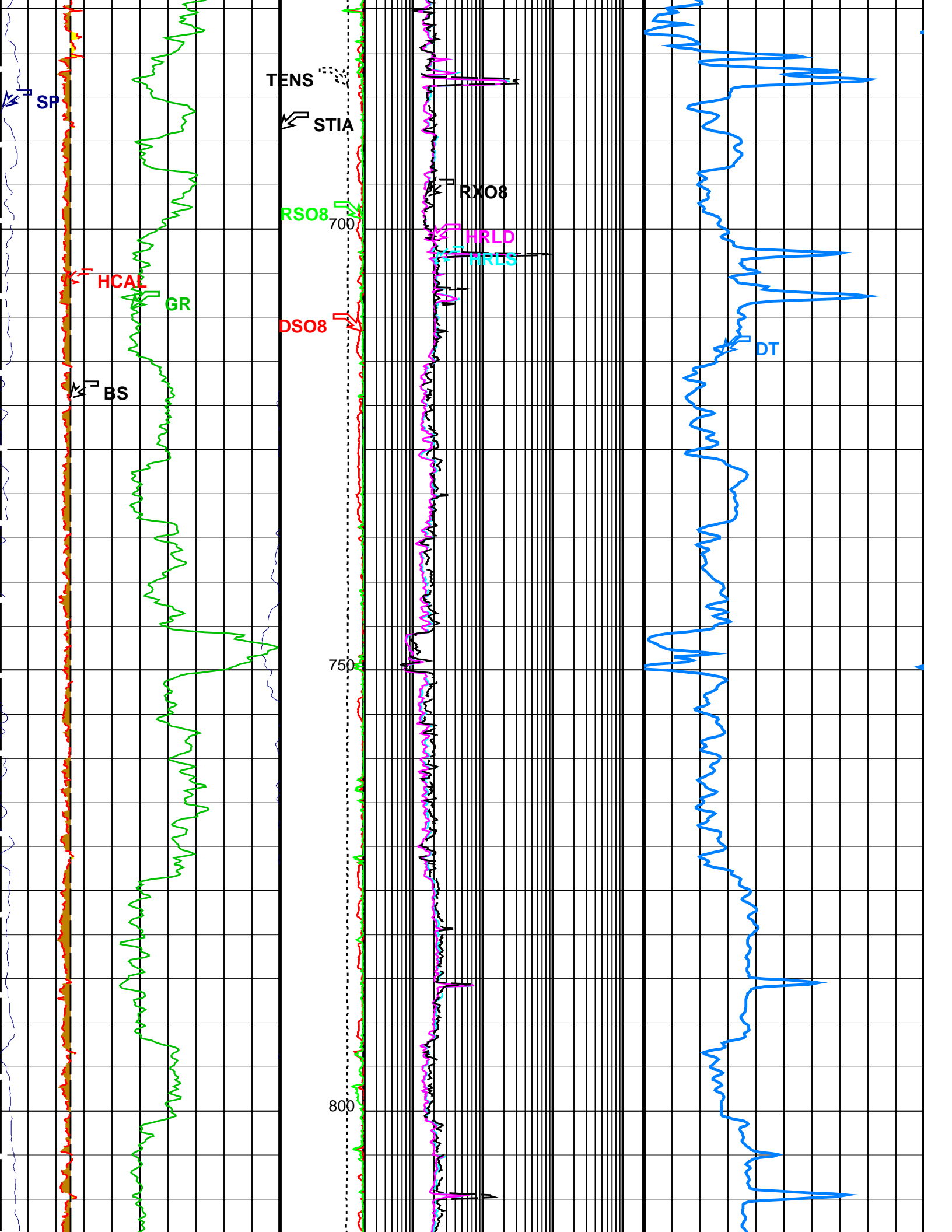
HALS-B	OP10-KP1	DSLТ-H	OP10-KP1
HILTB-FTB	OP10-KP1	HNGC-A	OP10-KP1
HNGS-BA	OP10-KP1	DTC-H	10C0-306
BSP	10C0-306		

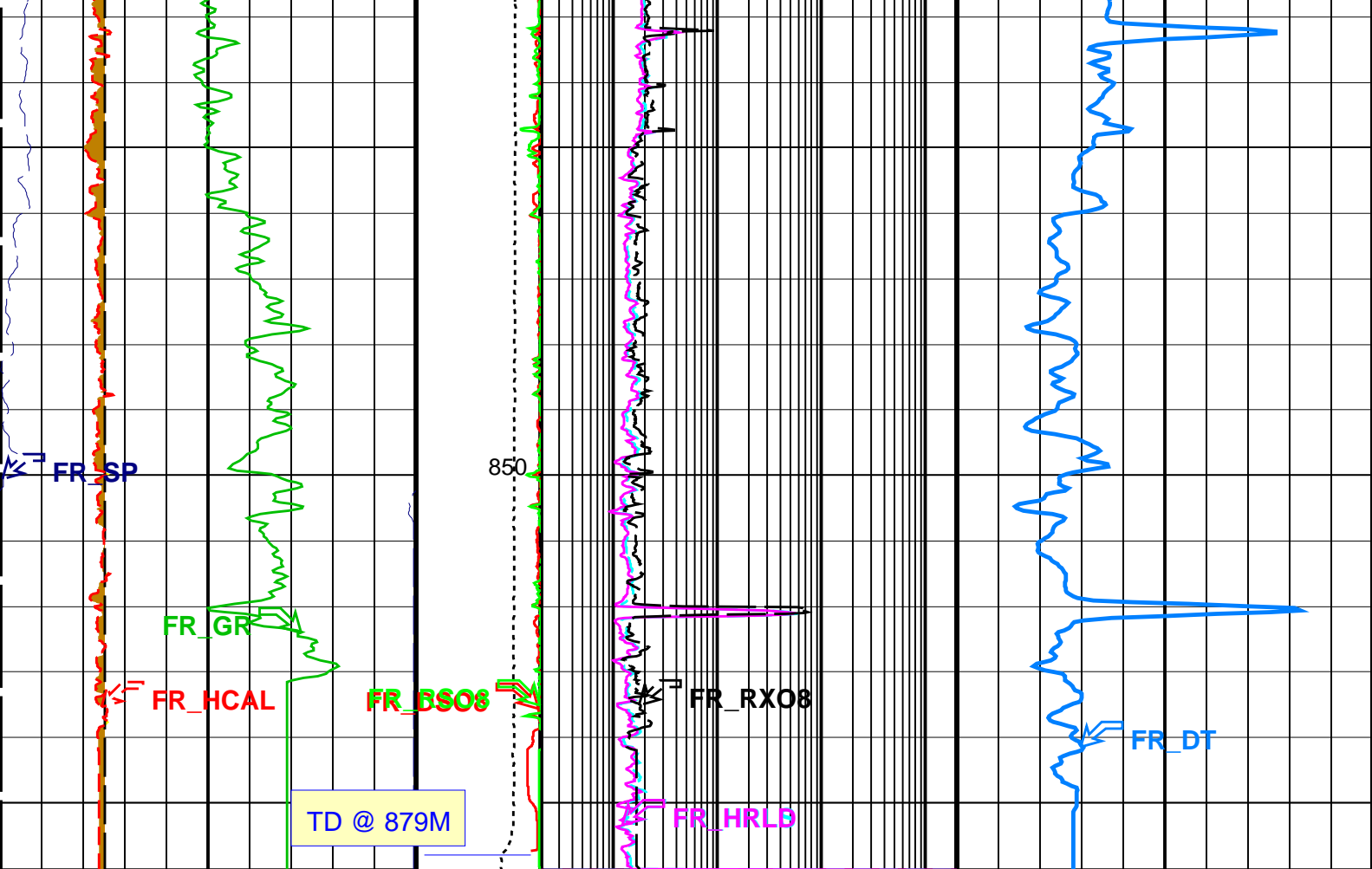
PIP SUMMARY

Time Mark Every 60 S









SP (SP) (MV)		20	Tension (TENS) (LBF)		High Resolution Shallow Resistivity (HRLS) (OHMM)		Delta-T (DT) (US/F)		
-80			10000	0	0.2		2000	150	50
Bit Size (BS) (IN)		16	H. Res. Density Standoff (DSO8)		High Resolution Deep Resistivity (HRLD) (OHMM)				
6			65 (MM)	0	0.2		2000		
Gamma Ray (GR) (GAPI)		150	H. Res. Resistivity Standoff (RSO8)		H. Res. Invaded Zone Resistivity (RXO8) (OHMM)				
0			65 (MM)	0	0.2		2000		
HILT Caliper (HCAL) (IN)		16							
Washout From BS to HCAL									
Mudcake From HCAL to BS									

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HALS-B: HILT Azimuthal Laterolog Sonde B		
ARIP_LTS	HALS Type of Image	Conductivities
ARIP_SHOULDER	HALS Long Tool String Correction	OFF
	HALS Shoulder Correction	OFF

BHT	HALS Borehole Correction	48	DEGC
DFHOP	Bottom Hole Temperature (used in calculations)		
	Diameter & Eccentering used in HALS Borehole Corrections		
	Caliper_Eccentered		
GRCC	HALS Groningen Correction	OFF	
HMSO	HALS Mechanical Standoff	1.5	IN
TCOR	HALS TLC Correction	OFF	
UNSPK	HALS Despiking Filter Option	OFF	
UNSPK_THOLD	HALS Despiking Filter Threshold (in %)	20	%
UNSPK_WINDOW	HALS Despiking Filter Window (inches)	6	IN
DSLTH: Digitizing Sonic Logging Tool			
	Telemetry Mode	DSLTH_FTB	
	DSLTH Firing Mode	SDDB	
DDEL	Digitizing Delay	0	US
DFAD_TYPE	DFAD type	DFAD2	
DIVL	DSLTH Depth Sampling Interval	20	
DRCS	DSLTH DLIS Recording Size	180	
DSIN	Digitizing Sample Interval	10	
DTFS	DSLTH Telemetry Frame Size	396	
DWCO	Digitizing Word Count	180	
GAI	Manual Gain	40	
MAHTR	Manual High Threshold Reference	120	
MGAI	Maximum Gain	60	
MNHT	Minimum High Threshold Reference	100	
NMSG	Near Minimum Sliding Gate	140	US
NMXG	Near Maximum Sliding Gate	970	US
RATE	Firing Rate	R15	
SFAF	Sonic Formation Attenuation Factor	10	DB/M
SGCL	Sliding Gate Closing Delta-T	140	US/F
SGDT	Sliding Gate Delta-T	40	US/F
SGW	Sliding Gate Width	110	US
SLEV	Signal Level for AGC	5000	
WMOD	Waveform Firing Mode	FULL	
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHT	Bottom Hole Temperature (used in calculations)	48	DEGC
DHC	Density Hole Correction	BS	
MPOF	MCFL Processing Operation Mode	ON	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	BARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BHT	Bottom Hole Temperature (used in calculations)	48	DEGC
BSP: Bridle SP			
SPNV	SP Next Value	0	MV
HOLEV: Integrated Hole/Cement Volume			
BHT	Bottom Hole Temperature (used in calculations)	48	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	889.00	M
TDL	Total Depth - Logger	879.00	M
System and Miscellaneous			
BS	Bit Size	8.500	IN
DFD	Drilling Fluid Density	1.10	G/C3
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	12.20	DEGC
PP	Playback Processing	NORMAL	

Format: Resistivity_Sonic_HR_1 Vertical Scale: 1:500 Graphics File Created: 03-Jul-2004 14:17

OP System Version: 10C0-306

MCM

HALS-B	OP10-KP1	DSLTH	OP10-KP1
HILTB-FTB	OP10-KP1	HNGC-A	OP10-KP1
HNGS-BA	OP10-KP1	DTC-H	10C0-306
BSP	10C0-306		

Input DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_008PUP	FN:13	PRODUCER	03-Jul-2004 10:35	880.3 M	454.6 M
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Calibration and Check Summary							
Measurement	Nominal	Master	Before	After	Change	Limit	Units
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Total current mode 1							
Before: 30–Jun–2004 16:22							
Itot 1 Gain	1.000	N/A	0.998	N/A	N/A	0.026	MA
Itot 1 Phase	0.000	N/A	–0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux current mode 1							
Before: 30–Jun–2004 16:22							
Iaux 1 Gain	1.000	N/A	0.994	N/A	N/A	0.035	MA
Iaux 1 Phase	0.000	N/A	–0.123	N/A	N/A	1.900	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux current mode 2							
Before: 30–Jun–2004 16:22							
Iaux 2 Gain	1.000	N/A	0.974	N/A	N/A	0.048	MA
Iaux 2 Phase	0.000	N/A	0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0 current mode 3A							
Before: 30–Jun–2004 16:22							
I0 3A Gain	1.000	N/A	0.983	N/A	N/A	0.036	UA
I0 3A Phase	0.000	N/A	–0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0 current mode 3B							
Before: 30–Jun–2004 16:22							
I0 3B Gain	1.000	N/A	0.980	N/A	N/A	0.036	UA
I0 3B Phase	0.000	N/A	–0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Torpedo Voltage gains							
Before: 30–Jun–2004 16:22							
Zvt 1 Gain	1.000	N/A	0.994	N/A	N/A	0.025	MV
Zvt 2 Gain	1.000	N/A	0.997	N/A	N/A	0.045	MV
Zvt 3 Gain	1.000	N/A	1.004	N/A	N/A	0.045	MV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Torpedo Voltage Phases							
Before: 30–Jun–2004 16:22							
Zvt 1 Phase	0.000	N/A	–0.102	N/A	N/A	2.300	DEG
Zvt 2 Phase	0.000	N/A	0.006	N/A	N/A	0.800	DEG
Zvt 3 Phase	0.000	N/A	–0.172	N/A	N/A	0.500	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Upper Bridle Voltage mode 1							
Before: 30–Jun–2004 16:22							
Zvb 1 Gain	1.000	N/A	0.994	N/A	N/A	0.025	MV
Zvb 1 Phase	0.000	N/A	–0.132	N/A	N/A	2.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–M2 Voltage gains							
Before: 30–Jun–2004 16:22							
ZVM 1 Gain	1.000	N/A	0.996	N/A	N/A	0.039	UV
ZVM 2 Gain	1.000	N/A	0.993	N/A	N/A	0.019	UV
ZVM 3 Gain	1.000	N/A	0.991	N/A	N/A	0.019	UV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–M2 Voltage Phases							
Before: 30–Jun–2004 16:22							
ZVM 1 Phase	0.000	N/A	0.224	N/A	N/A	3.800	DEG
ZVM 2 Phase	0.000	N/A	1.871	N/A	N/A	1.300	DEG
ZVM 3 Phase	0.000	N/A	1.002	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–A0* Voltage gains							
Before: 30–Jun–2004 16:22							
ZVH 1 Gain	1.000	N/A	0.997	N/A	N/A	0.013	UV
ZVH 2 Gain	1.000	N/A	0.990	N/A	N/A	0.046	UV
ZVH 3 Gain	1.000	N/A	0.990	N/A	N/A	0.046	UV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–A0* Voltage Phases							
Before: 30–Jun–2004 16:22							
ZVH 1 Phase	0.000	N/A	0.109	N/A	N/A	3.800	DEG
ZVH 2 Phase	0.000	N/A	1.992	N/A	N/A	1.300	DEG
ZVH 3 Phase	0.000	N/A	0.993	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux Voltage gains							

ZVA 1 Gain	1.000	N/A	1.070	N/A	N/A	0.032	MV
ZVA 2 Gain	1.000	N/A	1.063	N/A	N/A	0.045	MV
ZVA 3 Gain	1.000	N/A	1.013	N/A	N/A	0.045	MV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux Voltage Phases							
Before: 30–Jun–2004 16:22							
ZVA 1 Phase	0.000	N/A	1.005	N/A	N/A	2.300	DEG
ZVA 2 Phase	0.000	N/A	0.153	N/A	N/A	0.800	DEG
ZVA 3 Phase	0.000	N/A	0.162	N/A	N/A	0.500	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 1							
Before: 30–Jun–2004 16:22							
ZVD 1 Gain	1.000	N/A	0.997	N/A	N/A	0.047	UV
ZVD 1 Phase	0.000	N/A	0.096	N/A	N/A	3.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 2							
Before: 30–Jun–2004 16:22							
ZVD 2 Gain	1.000	N/A	0.982	N/A	N/A	0.056	UV
ZVD 2 Phase	0.000	N/A	1.287	N/A	N/A	1.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 3A							
Before: 30–Jun–2004 16:22							
ZVD 3A Gain	1.000	N/A	0.988	N/A	N/A	0.056	UV
ZVD 3A Phase	0.000	N/A	0.566	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 3B							
Before: 30–Jun–2004 16:22							
ZVD 3B Gain	1.000	N/A	1.000	N/A	N/A	0.054	UV
ZVD 3B Phase	0.000	N/A	–0.039	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB vertical Voltage mode 1							
Before: 30–Jun–2004 16:22							
ZVV 1 Gain	1.000	N/A	0.997	N/A	N/A	0.022	UV
ZVV 1 Phase	0.000	N/A	0.163	N/A	N/A	2.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB vertical Voltage mode 2							
Before: 30–Jun–2004 16:22							
ZVV 2 Gain	1.000	N/A	0.985	N/A	N/A	0.036	UV
ZVV 2 Phase	0.000	N/A	2.626	N/A	N/A	1.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 1							
Before: 30–Jun–2004 16:22							
Az 1 Gain – 0	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 1	1.000	N/A	0.998	N/A	N/A	0.047	UV
Az 1 Gain – 2	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 3	1.000	N/A	0.994	N/A	N/A	0.047	UV
Az 1 Gain – 4	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 5	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 6	1.000	N/A	0.997	N/A	N/A	0.047	UV
Az 1 Gain – 7	1.000	N/A	0.998	N/A	N/A	0.047	UV
Az 1 Gain – 8	1.000	N/A	0.997	N/A	N/A	0.047	UV
Az 1 Gain – 9	1.000	N/A	0.997	N/A	N/A	0.047	UV
Az 1 Gain – 10	1.000	N/A	1.001	N/A	N/A	0.047	UV
Az 1 Gain – 11	1.000	N/A	0.996	N/A	N/A	0.047	UV
AZ 1 Phase – 0	0.000	N/A	–0.001	N/A	N/A	3.800	DEG
AZ 1 Phase – 1	0.000	N/A	0.135	N/A	N/A	3.800	DEG
AZ 1 Phase – 2	0.000	N/A	0.098	N/A	N/A	3.800	DEG
AZ 1 Phase – 3	0.000	N/A	0.102	N/A	N/A	3.800	DEG
AZ 1 Phase – 4	0.000	N/A	0.211	N/A	N/A	3.800	DEG
AZ 1 Phase – 5	0.000	N/A	0.094	N/A	N/A	3.800	DEG
AZ 1 Phase – 6	0.000	N/A	0.065	N/A	N/A	3.800	DEG
AZ 1 Phase – 7	0.000	N/A	0.015	N/A	N/A	3.800	DEG
AZ 1 Phase – 8	0.000	N/A	0.129	N/A	N/A	3.800	DEG
AZ 1 Phase – 9	0.000	N/A	0.021	N/A	N/A	3.800	DEG
AZ 1 Phase – 10	0.000	N/A	0.126	N/A	N/A	3.800	DEG
AZ 1 Phase – 11	0.000	N/A	0.106	N/A	N/A	3.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 2							
Before: 30–Jun–2004 16:22							
Az 2 Gain – 0	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 1	1.000	N/A	0.983	N/A	N/A	0.056	UV
Az 2 Gain – 2	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 3	1.000	N/A	0.979	N/A	N/A	0.056	UV
Az 2 Gain – 4	1.000	N/A	0.985	N/A	N/A	0.056	UV
Az 2 Gain – 5	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 6	1.000	N/A	0.982	N/A	N/A	0.056	UV
Az 2 Gain – 7	1.000	N/A	0.983	N/A	N/A	0.056	UV
Az 2 Gain – 8	1.000	N/A	0.983	N/A	N/A	0.056	UV
Az 2 Gain – 9	1.000	N/A	0.982	N/A	N/A	0.056	UV
Az 2 Gain – 10	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 2 Gain – 11	1.000	N/A	0.981	N/A	N/A	0.056	UV

Az 2 Phase – 0	0.000	N/A	1.350	N/A	N/A	1.300	DEG
Az 2 Phase – 1	0.000	N/A	1.308	N/A	N/A	1.300	DEG
Az 2 Phase – 2	0.000	N/A	1.317	N/A	N/A	1.300	DEG
Az 2 Phase – 3	0.000	N/A	1.304	N/A	N/A	1.300	DEG
Az 2 Phase – 4	0.000	N/A	1.333	N/A	N/A	1.300	DEG
Az 2 Phase – 5	0.000	N/A	1.344	N/A	N/A	1.300	DEG
Az 2 Phase – 6	0.000	N/A	1.368	N/A	N/A	1.300	DEG
Az 2 Phase – 7	0.000	N/A	1.363	N/A	N/A	1.300	DEG
Az 2 Phase – 8	0.000	N/A	1.382	N/A	N/A	1.300	DEG
Az 2 Phase – 9	0.000	N/A	1.336	N/A	N/A	1.300	DEG
Az 2 Phase – 10	0.000	N/A	1.398	N/A	N/A	1.300	DEG
Az 2 Phase – 11	0.000	N/A	1.280	N/A	N/A	1.300	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 3A

Before: 30-Jun-2004 16:22

Az 3A Gain – 0	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 1	1.000	N/A	0.988	N/A	N/A	0.056	UV
Az 3A Gain – 2	1.000	N/A	0.990	N/A	N/A	0.056	UV
Az 3A Gain – 3	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 3A Gain – 4	1.000	N/A	0.990	N/A	N/A	0.056	UV
Az 3A Gain – 5	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 6	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 7	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 8	1.000	N/A	0.988	N/A	N/A	0.056	UV
Az 3A Gain – 9	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 10	1.000	N/A	0.992	N/A	N/A	0.056	UV
Az 3A Gain – 11	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Phase – 0	0.000	N/A	0.602	N/A	N/A	1.000	DEG
Az 3A Phase – 1	0.000	N/A	0.598	N/A	N/A	1.000	DEG
Az 3A Phase – 2	0.000	N/A	0.599	N/A	N/A	1.000	DEG
Az 3A Phase – 3	0.000	N/A	0.585	N/A	N/A	1.000	DEG
Az 3A Phase – 4	0.000	N/A	0.613	N/A	N/A	1.000	DEG
Az 3A Phase – 5	0.000	N/A	0.599	N/A	N/A	1.000	DEG
Az 3A Phase – 6	0.000	N/A	0.609	N/A	N/A	1.000	DEG
Az 3A Phase – 7	0.000	N/A	0.610	N/A	N/A	1.000	DEG
Az 3A Phase – 8	0.000	N/A	0.647	N/A	N/A	1.000	DEG
Az 3A Phase – 9	0.000	N/A	0.595	N/A	N/A	1.000	DEG
Az 3A Phase – 10	0.000	N/A	0.639	N/A	N/A	1.000	DEG
Az 3A Phase – 11	0.000	N/A	0.565	N/A	N/A	1.000	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 3B

Before: 30-Jun-2004 16:22

Az 3B Gain – 0	1.000	N/A	1.007	N/A	N/A	0.054	UV
Az 3B Gain – 1	1.000	N/A	1.002	N/A	N/A	0.054	UV
Az 3B Gain – 2	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 3	1.000	N/A	0.999	N/A	N/A	0.054	UV
Az 3B Gain – 4	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 5	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 6	1.000	N/A	1.005	N/A	N/A	0.054	UV
Az 3B Gain – 7	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 8	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 9	1.000	N/A	1.003	N/A	N/A	0.054	UV
Az 3B Gain – 10	1.000	N/A	1.010	N/A	N/A	0.054	UV
Az 3B Gain – 11	1.000	N/A	0.997	N/A	N/A	0.054	UV
Az 3B Phase – 0	0.000	N/A	0.232	N/A	N/A	1.000	DEG
Az 3B Phase – 1	0.000	N/A	0.167	N/A	N/A	1.000	DEG
Az 3B Phase – 2	0.000	N/A	0.106	N/A	N/A	1.000	DEG
Az 3B Phase – 3	0.000	N/A	0.121	N/A	N/A	1.000	DEG
Az 3B Phase – 4	0.000	N/A	0.061	N/A	N/A	1.000	DEG
Az 3B Phase – 5	0.000	N/A	0.181	N/A	N/A	1.000	DEG
Az 3B Phase – 6	0.000	N/A	0.111	N/A	N/A	1.000	DEG
Az 3B Phase – 7	0.000	N/A	0.192	N/A	N/A	1.000	DEG
Az 3B Phase – 8	0.000	N/A	0.136	N/A	N/A	1.000	DEG
Az 3B Phase – 9	0.000	N/A	0.131	N/A	N/A	1.000	DEG
Az 3B Phase – 10	0.000	N/A	0.190	N/A	N/A	1.000	DEG
Az 3B Phase – 11	0.000	N/A	-0.014	N/A	N/A	1.000	DEG

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary

Before: 30-Jun-2004 16:18

BS Window Ratio	1.011	N/A	1.012	N/A	N/A	N/A	
BS Window Sum	16100	N/A	16060	N/A	N/A	N/A	CPS
SS Window Ratio	0.4808	N/A	0.4806	N/A	N/A	N/A	
SS Window Sum	10970	N/A	10980	N/A	N/A	N/A	CPS
LS Window Ratio	0.2955	N/A	0.2944	N/A	N/A	N/A	
LS Window Sum	1160	N/A	1164	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo-multiplier High Voltages Calibrations

Before: 30-Jun-2004 16:18

BS PM High Voltage (Command)	1495	N/A	1468	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1944	N/A	1923	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1839	N/A	1832	N/A	N/A	N/A	V

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2

Master: 17-Jun-2004 21:58 Before: 30-Jun-2004 16:27

Coincidence Count Rate Ratio	1.000	1.006	1.012	N/A	N/A	0.05000	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration							
Master: 17-Jun-2004 21:53							
Na 511 Peak Set Point	40.00	42.00	--	--	--	--	
Th Peak Loc	209.6	211.5	--	--	--	--	
Th Peak Res	7.000	7.826	--	--	--	--	%
Background Count Rate	142.5	140.0	--	--	--	--	CPS
Gain Ratio	1.000	0.9901	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration							
Master: 17-Jun-2004 21:53							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	207.7	--	--	--	--	
Th Peak Res	7.000	7.127	--	--	--	--	%
Background Count Rate	142.5	133.6	--	--	--	--	CPS
Gain Ratio	1.000	0.9954	--	--	--	--	

The GLS-VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 11.1 DEGC.
Thermal Housing Size 3.369 IN.

HILT Azimuthal Laterolog Sonde B / Equipment Identification		
Primary Equipment:		
Auxiliary Equipment:		
Laterolog Control Module	LCM – AA	2747

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Total current mode 1					
Itot 1 Gain MA		Value	Itot 1 Phase DEG		Value
		0.998			-0.000
0.926	1.000	1.081	-0.100	0.000	0.100
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 30-Jun-2004 16:22					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux current mode 1					
Iaux 1 Gain MA		Value	Iaux 1 Phase DEG		Value
		0.994			-0.123
0.854	1.000	1.180	-4.600	0.000	4.600
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 30-Jun-2004 16:22					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux current mode 2					
Iaux 2 Gain MA		Value	Iaux 2 Phase DEG		Value
		0.974			0.000
0.816	1.000	1.232	-1.000	0.000	0.100
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 30-Jun-2004 16:22					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0 current mode 3A					
IO 3A Gain UA		Value	IO 3A Phase DEG		Value
		0.983			-0.000
0.893	1.000	1.114	-1.000	0.000	0.100
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 30-Jun-2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0 current mode 3B					
IO 3B Gain UA		Value	IO 3B Phase DEG		Value
		0.980			-0.000
0.893	1.000	1.114	-1.000	0.000	0.100
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 30-Jun-2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Torpedo Voltage gains					
Zvt 1 Gain MV		Value	Zvt 2 Gain MV		Value
		0.994			0.997
0.925	1.000	1.078	0.865	1.000	1.153
(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
Before: 30-Jun-2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Torpedo Voltage Phases					
Zvt 1 Phase DEG		Value	Zvt 2 Phase DEG		Value




-4.400 (Minimum)	0.000 (Nominal)	4.400 (Maximum)	-2.800 (Minimum)	0.000 (Nominal)	2.800 (Maximum)	-1.400 (Minimum)	0.000 (Nominal)	1.400 (Maximum)
Before: 30-Jun-2004 16:22								




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Upper Bridle Voltage mode 1					
Zvb 1 Gain MV	Value	Zvb 1 Phase DEG	Value		
	0.994		-0.132		
0.925 (Minimum)	1.000 (Nominal)	1.078 (Maximum)	-4.400 (Minimum)	0.000 (Nominal)	4.400 (Maximum)
Before: 30-Jun-2004 16:22					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-M2 Voltage gains					
ZVM 1 Gain UV	Value	ZVM 2 Gain UV	Value	ZVM 3 Gain UV	Value
	0.996		0.993		0.991
0.895 (Minimum)	1.000 (Nominal)	1.117 (Maximum)	0.943 (Minimum)	1.000 (Nominal)	1.056 (Maximum)
Before: 30-Jun-2004 16:22					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-M2 Voltage Phases					
ZVM 1 Phase DEG	Value	ZVM 2 Phase DEG	Value	ZVM 3 Phase DEG	Value
	0.224		1.871		1.002
-6.500 (Minimum)	0.000 (Nominal)	6.500 (Maximum)	-3.300 (Minimum)	0.000 (Nominal)	3.300 (Maximum)
Before: 30-Jun-2004 16:22					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-A0* Voltage gains					
ZVH 1 Gain UV	Value	ZVH 2 Gain UV	Value	ZVH 3 Gain UV	Value
	0.997		0.990		0.990
0.962 (Minimum)	1.000 (Nominal)	1.039 (Maximum)	0.864 (Minimum)	1.000 (Nominal)	1.154 (Maximum)
Before: 30-Jun-2004 16:22					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-A0* Voltage Phases					
ZVH 1 Phase DEG	Value	ZVH 2 Phase DEG	Value	ZVH 3 Phase DEG	Value
	0.109		1.992		0.993
-6.500 (Minimum)	0.000 (Nominal)	6.500 (Maximum)	-3.300 (Minimum)	0.000 (Nominal)	3.300 (Maximum)
Before: 30-Jun-2004 16:22					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux Voltage gains					
ZVA 1 Gain MV	Value	ZVA 2 Gain MV	Value	ZVA 3 Gain MV	Value
	1.070		1.063		1.013
0.905 (Minimum)	1.000 (Nominal)	1.103 (Maximum)	0.866 (Minimum)	1.000 (Nominal)	1.151 (Maximum)
Before: 30-Jun-2004 16:22					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux Voltage Phases					
ZVA 1 Phase DEG	Value	ZVA 2 Phase DEG	Value	ZVA 3 Phase DEG	Value
	1.005		0.153		0.162
-4.100 (Minimum)	0.000 (Nominal)	4.100 (Maximum)	-2.300 (Minimum)	0.000 (Nominal)	2.300 (Maximum)
Before: 30-Jun-2004 16:22					

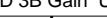

HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB A0*-A0** Diff. Voltage mode 1			
ZVD 1 Gain UV	Value	ZVD 1 Phase DEG	Value
	0.997		0.096
0.874 (Minimum)	1.000 (Nominal)	1.147 (Maximum)	-6.300 (Minimum)
Before: 30-Jun-2004 16:22			



HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB A0*-A0** Diff. Voltage mode 2			
ZVD 2 Gain UV	Value	ZVD 2 Phase DEG	Value
	0.982		1.287
0.842 (Minimum)	1.000 (Nominal)	1.187 (Maximum)	-3.300 (Minimum)
Before: 30-Jun-2004 16:22			



HILT Azimuthal Laterolog Sonde B Wellsite Calibration	
HALSB A0*-A0** Diff. Voltage mode 3A	

























HILT Azimuthal Laterolog Sonde B Wellsite Calibration	
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

ZVD 3A Gain UV		Value	ZVD 3A Phase DEG		Value	
		0.988			0.566	
0.842 (Minimum)	1.000 (Nominal)		1.187 (Maximum)	-2.000 (Minimum)	0.000 (Nominal)	2.000 (Maximum)
Before: 30-Jun-2004 16:22						

























ZVD 3B Gain UV				Value	ZVD 3B Phase DEG				Value
				1.000					-0.039
0.845 (Minimum)		1.000 (Nominal)		1.183 (Maximum)	-2.000 (Minimum)		0.000 (Nominal)		2.000 (Maximum)
Before: 30-Jun-2004 16:22									

























HILT Azimuthal Laterolog Sonde B Wellsite Calibration						
HALSB vertical Voltage mode 1						
ZVV 1 Gain UV		Value	ZVV 1 Phase DEG		Value	
		0.997			0.163	
0.936 (Minimum)	1.000 (Nominal)		1.065 (Maximum)	-4.600 (Minimum)	0.000 (Nominal)	4.600 (Maximum)
Before: 30-Jun-2004 16:22						

HILT Azimuthal Laterolog Sonde B Wellsite Calibration						
HALSB vertical Voltage mode 2						
ZVV 2 Gain UV		Value	ZVV 2 Phase DEG		Value	
		0.985			2.626	
0.895 (Minimum)	1.000 (Nominal)		1.112 (Maximum)	-2.800 (Minimum)	0.000 (Nominal)	2.800 (Maximum)
Before: 30-Jun-2004 16:22						

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 1					
Idx	Az 1 Gain UV	Value	Idx	AZ 1 Phase DEG	Value
0		0.999	0		-0.001
1		0.998	1		0.135
2		0.999	2		0.098
3		0.994	3		0.102
4		0.999	4		0.211
5		0.999	5		0.094
6		0.997	6		0.065
7		0.998	7		0.015
8		0.997	8		0.129
9		0.997	9		0.021
10		1.001	10		0.126
11		0.996	11		0.106
0.874 (Minimum)		1.000 (Nominal)	1.147 (Maximum)		
-6.300 (Minimum)		0.000 (Nominal)	6.300 (Maximum)		
Before: 30-Jun-2004 16:22					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration							
HALSB Azimuthal Voltages mode 2							
Idx	Az 2 Gain UV	Value	Idx	Az 2 Phase DEG	Value		
0		0.984	0		1.350		
1		0.983	1		1.308		
2		0.984	2		1.317		
3		0.979	3		1.304		
4		0.985	4		1.333		
5		0.984	5		1.344		
6		0.982	6		1.368		
7		0.983	7		1.363		
8		0.983	8		1.382		
9		0.982	9		1.336		
10		0.987	10		1.398		
11		0.981	11		1.280		
0.842 (Minimum)		1.000 (Nominal)	1.187 (Maximum)	-3.300 (Minimum)		0.000 (Nominal)	3.300 (Maximum)
Before: 30-Jun-2004 16:22							







HILT Azimuthal Laterolog Sonde B Wellsite Calibration							
HALSB Azimuthal Voltages mode 3A							
Idx	Az 3A Gain UV	Value	Idx	Az 3A Phase DEG	Value		
0		0.989	0		0.602		
1		0.988	1		0.598		
2		0.990	2		0.599		
3		0.984	3		0.585		
4		0.990	4		0.613		
5		0.989	5		0.599		
6		0.987	6		0.609		
7		0.989	7		0.610		
8		0.988	8		0.647		
9		0.987	9		0.595		
10		0.992	10		0.639		
11		0.987	11		0.565		
0.842 (Minimum)		1.000 (Nominal)	1.187 (Maximum)	-2.000 (Minimum)		0.000 (Nominal)	2.000 (Maximum)
Before: 30-Jun-2004 16:22							

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 3B					
Idx	Az 3B Gain UV	Value	Idx	Az 3B Phase DEG	Value
0		1.007	0		0.232
1		1.002	1		0.167
2		1.006	2		0.106
3		0.999	3		0.121
4		1.006	4		0.061
5		1.006	5		0.181
6		1.005	6		0.111
7		1.006	7		0.192
8		1.006	8		0.136
9		1.003	9		0.131
10		1.010	10		0.190
11		0.997	11		-0.014
0.845 (Minimum)	1.000 (Nominal)	1.183 (Maximum)	-2.000 (Minimum)	0.000 (Nominal)	2.000 (Maximum)
Before: 30-Jun-2004 16:22					




Primary Equipment:
HILT high-Resolution Mechanical Sonde
HILT Rxo Gamma-ray Device
HILT Nuclear Back-Scatter Detector
HILT Nuclear Short-Spacing Detector
HILT Nuclear Long-Spacing Detector
Micro Cylindrically Focused Log Device
GR Logging Source
HILT High Res. Control Cartridge

HRMS – B 1765
HRGD – B 1760
HILT –
HILT –
HILT –
MCFL –
GLS – VJ 3739
HRCC – B 1769




Auxiliary Equipment:

High resolution Integrated Logging Tool-DTS Wellsite Calibration														
Stab Measurement Summary														
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value
Before				1.012	Before				0.4806	Before				0.2944
	0.9600 (Minimum)	1.011 (Nominal)	1.061 (Maximum)		0.4567 (Minimum)	0.4808 (Nominal)	0.5048 (Maximum)			0.2808 (Minimum)	0.2955 (Nominal)	0.3103 (Maximum)		
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value
Before				16060	Before				10980	Before				1164
	15290 (Minimum)	16100 (Nominal)	16900 (Maximum)		10420 (Minimum)	10970 (Nominal)	11520 (Maximum)			1102 (Minimum)	1160 (Nominal)	1218 (Maximum)		
Before: 30-Jun-2004 16:18														




Before: 30-Jun-2004 16:18

High resolution Integrated Logging Tool–DTS Wellsite Calibration														
Photo–multiplier High Voltages Calibrations														
Phase	BS PM High Voltage (Command) V			Value	Phase	SS PM High Voltage (Command) V			Value	Phase	LS PM High Voltage (Command) V			Value
Before				1468	Before				1923	Before				1832
	1395 (Minimum)	1495 (Nominal)	1595 (Maximum)		1844 (Minimum)	1944 (Nominal)	2044 (Maximum)			1739 (Minimum)	1839 (Nominal)	1939 (Maximum)		
Before: 30–Jun–2004 16:18														



Before: 30-Jun-2004 16:18

High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Crystal Quality Resolutions Calibration											
Phase	BS Crystal Resolution %		Value	Phase	SS Crystal Resolution %		Value	Phase	LS Crystal Resolution %		Value
Before			12.12	Before			11.55	Before			9.483
	11.17 (Minimum)	12.17 (Nominal)	13.17 (Maximum)		10.48 (Minimum)	11.48 (Nominal)	12.48 (Maximum)		8.283 (Minimum)	9.283 (Nominal)	10.28 (Maximum)
Before: 30-Jun-2004 16:18											




Before: 30-Jun-2004 16:18

High resolution Integrated Logging Tool-DTS Wellsite Calibration														
MCFL Calibration														
Phase	Raw B0 Resistivity OHMM			Value	Phase	Raw B1 Resistivity OHMM			Value	Phase	Raw B2 Resistivity OHMM			Value
Before				3799	Before				3768	Before				3798
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)			
Before: 30-Jun-2004 16:19														

Before: 30-Jun-2004 16:19





High resolution Integrated Logging Tool-DTS Wellsite Calibration							
HILT Caliper Calibration							
Phase	HILT Caliper Zero Measurement IN		Value	Phase	HILT Caliper Plus Measurement IN		Value
Before			8.215	Before			12.39
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 30-Jun-2004 16:15							


Before: 30-Jun-2004 16:15





High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Detector Calibration											
Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig - Bkg) GAPI		Value	Phase	Gamma Ray (Calibrated) GAPI		Value
Before			26.47	Before			174.8	Before			160.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		158.9 (Minimum)	174.8 (Nominal)	190.7 (Maximum)		145.0 (Minimum)	160.0 (Nominal)	175.0 (Maximum)
Before: 30-Jun-2004 16:14											

Before: 30-Jun-2004 16:14




High resolution Integrated Logging Tool-DTS Wellsite Calibration					
Zero Measurement					

Phase	CNTC Background CPS	Value	Phase	CFIC Background CPS	Value
Master		32.30	Master		29.13
Before		30.57	Before		29.39
5.000 (Minimum) 32.30 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 29.13 (Nominal) 40.00 (Maximum)		
Master: 15-Jun-2004 17:21			Before: 30-Jun-2004 16:15		

High resolution Integrated Logging Tool-DTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration M/S2	Value
Before		9.802
9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)		
Before: 30-Jun-2004 16:17		

High resolution Integrated Logging Tool-DTS Master Calibration							
Inversion results							
Phase	Rho Aluminum G/C3		Value	Phase	Rho Magnesium G/C3		Value
Master			2.599	Master			1.688
2.586 (Minimum)				1.676 (Minimum)			
2.596 (Nominal)				1.686 (Nominal)			
2.606 (Maximum)				1.696 (Maximum)			
Phase	Pe Aluminum		Value	Phase	Pe Magnesium		Value
Master			2.561	Master			2.615
2.470 (Minimum)				2.550 (Minimum)			
2.570 (Nominal)				2.650 (Nominal)			
2.670 (Maximum)				2.750 (Maximum)			
Master: 15-Jun-2004 11:26							

High resolution Integrated Logging Tool-DTS Master Calibration												
Deviation Summary												
Phase	BS Average Deviation %		Value	Phase	SS Average Deviation %		Value	Phase	LS Average Deviation %		Value	
Master	<div><div></div></div>		0.4141	Master	<div><div></div></div>		0.2442	Master	<div><div></div></div>		0.4543	
-0.6000 (Minimum)			0 (Nominal)	0.6000 (Maximum)				-1.000 (Minimum)			0 (Nominal)	1.000 (Maximum)
Phase	BS Max Deviation %		Value	Phase	SS Max Deviation %		Value	Phase	LS Max Deviation %		Value	
Master	<div><div></div></div>		0.9721	Master	<div><div></div></div>		1.285	Master	<div><div></div></div>		0.9733	
-1.600 (Minimum)			0 (Nominal)	1.600 (Maximum)				-2.500 (Minimum)			0 (Nominal)	2.500 (Maximum)
-3.500 (Minimum)			0 (Nominal)	3.500 (Maximum)				-3.500 (Minimum)			0 (Nominal)	3.500 (Maximum)
Master: 15-Jun-2004 11:26												

High resolution Integrated Logging Tool-DTS Master Calibration														
Tank Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				5825	Master				2452	Master				2.376
5000 (Minimum)			6031 (Nominal)	7200 (Maximum)	2075 (Minimum)			2793 (Nominal)	3125 (Maximum)	2.120 (Minimum)			2.159 (Nominal)	2.540 (Maximum)
Master: 15-Jun-2004 17:21														

High resolution Integrated Logging Tool—DTS Master Calibration											
Tank Measurement											
Phase	Thermal Near Corr. (Tank) CPS		Value	Phase	Thermal Far Corr. (Tank) CPS		Value	Phase	CNTC/CFTC (Tank)		Value
Master	<div><div></div></div>		5825	Master	<div><div></div></div>		2452	Master	<div><div></div></div>		2.376
5000 (Minimum)6031 (Nominal)7200 (Maximum)				2075 (Minimum)2793 (Nominal)3125 (Maximum)				2.120 (Minimum)2.159 (Nominal)2.540 (Maximum)			
Master: 15–Jun–2004 17:21											

Hostile Natural Gamma Ray Cartridge - A / Equipment Identification

Primary Equipment:
HNGC Cartridge

HNGC - A

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Auxiliary Equipment:
HNGC Housing

HNGH - A

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:

HNGS Sonde

HNGS – BA

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Auxiliary Equipment:

HNGS Sonde Housing

HNSH – BA















3

Gamma Source Radioactive

GSR – U

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check















Phase	Na 511 Peak Loc		Value	Phase	Na 511 Peak Res %		Value	Phase	High Voltage V		Value
Master			40.64	Master			16.25	Master			1159
Before			39.64	Before			15.10	Before			1163
	37.50 (Minimum)	40.00 (Nominal)	42.50 (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			145.9	Master			8.737	Master			13.72
Before			143.2	Before			8.315	Before			16.29
	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			42.07								
Before			43.16								
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)								

Master: 17-Jun-2004 21:58

Before: 30-Jun-2004 16:27



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			39.68	Master			14.94	Master			1080			
Before			39.72	Before			14.70	Before			1085			
37.50 (Minimum)			40.00 (Nominal)	42.50 (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			143.0	Master			8.683	Master			14.40			
Before			141.9	Before			8.147	Before			15.55			
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			41.97											
Before			42.72											
10.00 (Minimum)			45.00 (Nominal)									100.0 (Maximum)		




Master: 17-Jun-2004 21:58

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




Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		1.006
Before		1.012
<div>0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)</div>		
Master: 17-Jun-2004 21:58		
Before: 30-Jun-2004 16:27		

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		42.00	Master		211.5	Master		7.826

<div><div></div><div>38.00 (Minimum)</div><div>40.00 (Nominal)</div><div>42.00 (Maximum)</div></div>			<div><div></div><div>201.0 (Minimum)</div><div>209.6 (Nominal)</div><div>218.3 (Maximum)</div></div>			<div><div></div><div>5.000 (Minimum)</div><div>7.000 (Nominal)</div><div>9.000 (Maximum)</div></div>		
Phase	Background Count Rate CPS		Value	Phase	Gain Ratio		Value	
Master	<div><div></div><div></div></div>		140.0	Master	<div><div></div><div></div></div>		0.9901	
<div><div></div><div>20.00 (Minimum)</div><div>142.5 (Nominal)</div><div>265.0 (Maximum)</div></div>			<div><div></div><div>0.9400 (Minimum)</div><div>1.000 (Nominal)</div><div>1.060 (Maximum)</div></div>					
Master: 17-Jun-2004 21:53								

Hostile Natural Gamma Ray Sonde Master Calibration														
Detector 2 Calibration														
Phase	Na 511 Peak Set Point			Value	Phase	Th Peak Loc			Value	Phase	Th Peak Res %			Value
Master				41.00	Master				207.7	Master				7.127
	38.00 (Minimum)	40.00 (Nominal)	42.00 (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				133.6	Master				0.9954					
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)			0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)						
Master: 17-Jun-2004 21:53														

Company: **Essential Petroleum Resources Limited**

Schlumberger

Well: **Findra-1**

Field: **PEP 159**

Rig: **Hunt Rig #2**

Country: **Australia**

HALS-BHC-PEX-HNGS

Resistivity-Sonic Print

Scale 1:500