Schlumberger

Company: **CDEX**

Well: **C0009A**

Field: **Kumanonada, Offshore Kii peninsula**

Rig: **Chikyu** Country: **JAPAN**

Rig: Chikyu
Field: Kumanonada, Offshore Kii peninsu
Location: NanKai Trough
Well: C0009A
Company: CDEX

Merged

3658.3m − 2785.0m

Suite 1, Run 1 (1:500)

LOCATION

NanKai Trough
NT2−11B

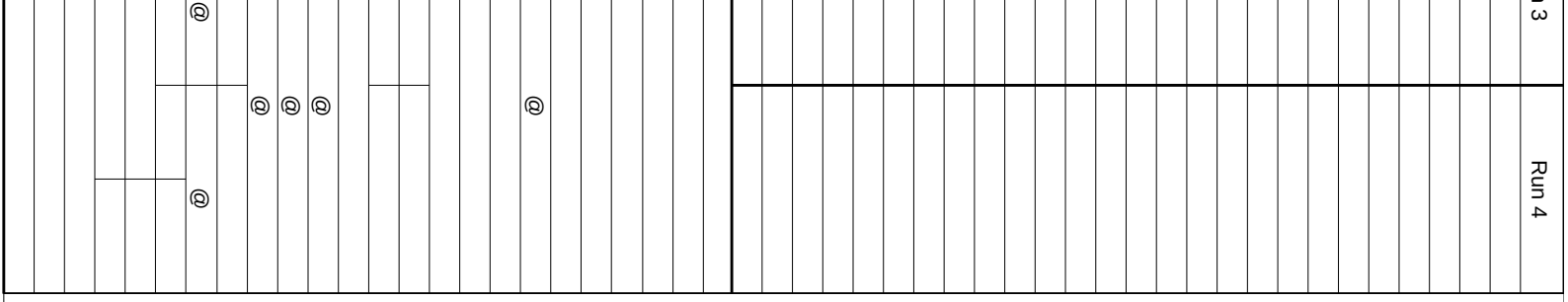
Elev.: K.B.
G.L.
D.F. 28.30 m

Permanent Datum: MEAN SEA LEVEL Elev.: 28.30 m
Log Measured From: DRILL FLOOR 0.00 m above Perm. Datum
Drilling Measured From: DRILL FLOOR

Prefecture:	Max. Well Deviation	Longitude	Latitude
Wakayama	0.7 deg	136* 32.1489' E	33* 27.4704' N

	Run 1	Run 2	Run 3
Logging Date	12−Jul−2009		
Run Number	1		
Depth Driller	3686 m		
Schlumberger Depth	3667 m		
Bottom Log Interval	3658.3 m		
Top Log Interval	2785 m		
Casing Driller Size @ Depth	20.000 in @ 2786.2 m	@	@
Casing Schlumberger	2785 m		
Bit Size	12.250 in		
Type Fluid In Hole	KCl−NaCl Polymer		
MUD Density / Viscosity	1.1 g/cm3 / 97 s		
MUD Fluid Loss / PH	4.1 cm3 / 10.6		
MUD Source Of Sample	Flow Line		
RM @ Measured Temperature	0.068 ohm.m @ 26 degC	@	@
RMF @ Measured Temperature	0.059 ohm.m @ 27 degC	@	@
RMC @ Measured Temperature	0.083 ohm.m @ 26 degC	@	@
Source RMF / RMC	Press / Press		
RM @ MRT / RMF @ MRT	0.060 @ 32 / 0.052 @ 32	@ / @	@ / @
Maximum Recorded Temperatures	32 degC / 31 / 31		
Circulation Stopped / Time	11−Jul−2009 / 5:30		
Logger On Bottom / Time	11−Jul−2009 / 4:45		
Unit Number / Location	4308 / JPOP		
Recorded By	Payap Thongpracharn		
Witnessed By	T. Honda / K. Takahashi		

	Run 1	Run 2	Run 3
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@ / @		
Maximum Recorded Temperatures			
Circulation Stopped / Time			
Logger On Bottom / Time			
Unit Number / Location			
Recorded By			
Witnessed By			



DEPTH SUMMARY LISTING

Date Created: 15−JUL−2009 16:22:03

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−JA	Type:	CMTD−B/A	Type:	7−46A XXS
Serial Number:	6726	Serial Number:	2986	Serial Number:	6019
Calibration Date:		Calibration Date:	16−Apr−09	Length:	9200 M
Calibrator Serial Number:	17	Calibrator Serial Number:	1049		
Calibration Cable Type:	7−46A XXS	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−6	Calibration RMS:	373	Rig Type:	Offshore Floater with WMC
Wheel Correction 2:	−6	Calibration Peak Error:	499		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	89.00 M
Rig Up Length At Bottom:	89.00 M
Rig Up Length Correction:	0.00 M
Stretch Correction:	3.20 M
Tool Zero Check At Surface:	0.00 M

Depth Control Remarks

1. Schlumberger Depth Control Policy is followed.
2. IDW used as primary depth control device.
3. Z−Chart used as secondary depth control device.
4. Tide Level = 0 m.
5.
6.

OTHER SERVICES1

OS1: FMI−HNGS−EMS−Sonic Scanner−PPC−GR
OS2: MDT Dual Packer & Sungle Probe
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 1

This is the first log in the well.

Downlog used as the reference log.

Tool ran as per tool sketch and 2.5 inch standoffs used.

Maximum recorded temperature from logging head thermometers = 32.22 degC.

Maximum deviation = 0.70 deg @ 2749.79mBRT.

Logging speed was 1,800 ft/hr.

Haft strength neutron source (8 Ci) used due to Japanese regulation.

Half strength neutron source (3 Ci) used due to Japanese regulations.

Repeat section was taken from 3665.4m−3575.0m as per client request.

DTCO data was taken from Run 2 (FMI−HNGS−EMS−SonicScanner−PPC−GR) as per client request.

Caliper check in casing = 18.75 inch.

Sonic check in casing = 57 us/ft.

Some of data affected by borehole condition (rugosity/washout).

Circulation Started: 11−Jul−2009; 1:45am

Circulation Stopped: 11−Jul−2009; 5:30am

AV=55 cps, PV=35 cps, YV=40 lb/100ft2, Gel=7−8 lb/100ft2, WL=4.1 ml, MC=0.5 mm

pH=10.6 ml, Pf=0.2 ml, Pm=0.3 ml, Mf=0.3 ml, Cl−=71,700 mg/l, Ca++Mg++=80/97 mg/l, Sand = 0.2%

O/S/W=0/6/94 %Vol, MBC=0.5 ml/ml mud, K+=26,400 mg/l

RUN 1		
SERVICE ORDER #:	AVDO−0003	
PROGRAM VERSION:	17C0−154	
FLUID LEVEL:	10 m	
LOGGED INTERVAL	START	STOP

RUN 2		
SERVICE ORDER #:		
PROGRAM VERSION:		
FLUID LEVEL:		
LOGGED INTERVAL	START	STOP

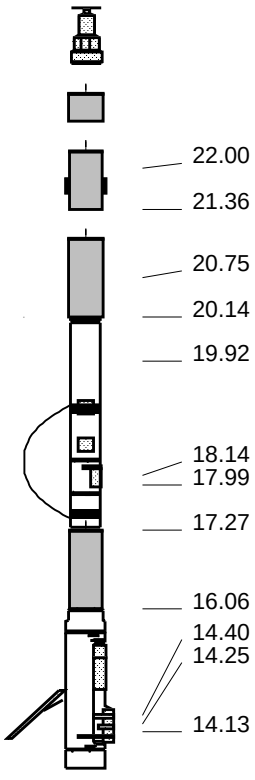
EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

GSR−Y 1005
NCT−B 2138
CNB−AB
NCS−YC 5380
WITM (DTS)−A

DOWNHOLE EQUIPMENT



LEH−QT 23.60
LEH−QT 1794

AH−369 22.71

DTC−H 22.28
ECH−KC 9799
DTCH0−A
0.5 IN Standoff

SPA−A 21.36
SPA−A 9933

HILTH−FTB 20.14
HGNSD−H 3840
HMCA−H
HGNH 2916
NLS−KL 5228
NSR−F 5228
HACCZ−H
HCNT−H
HGR
HRCC−H 3794
HRMS−H 3846
HRGD−H 3824
GLS−VJ 3804
MCFL Device−H
HILT Nucl. LS−H
HILT Nucl. SS−H
HILT Nucl. BS−H
BOW−SPR

AH−184 13.54
AH−184 936

AH−184 12.93
AH−184 917

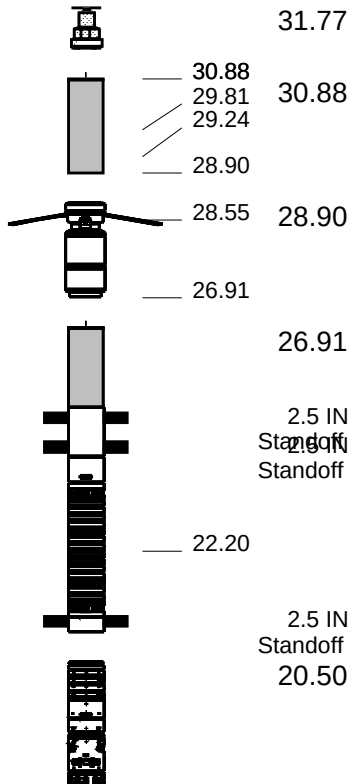
HRLT−B 12.32
HRUH−B 755
HRUC−B 755
HRLS−B 846
HRLH−B 849
HRLC−B 847
AH−270 846
2.5 IN Standoff

RUN 2

SURFACE EQUIPMENT

GSR−Y 1005
WITM (EDTS)−A

DOWNHOLE EQUIPMENT



LEH−QT 31.77
LEH−QT 1296

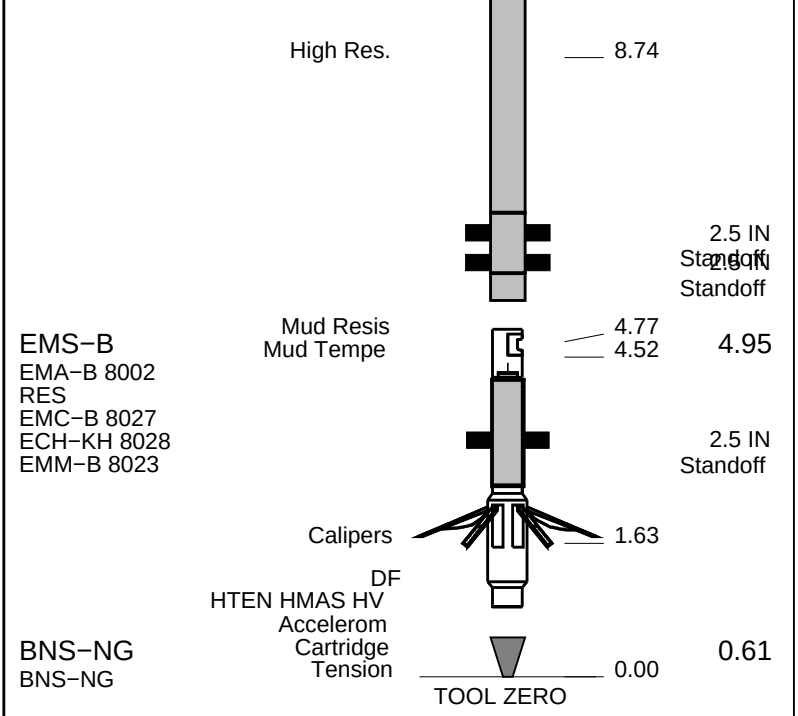
EDTC−B 30.88
EDTH−B 8206
EDTC−BB 8218
EDTG−A/B 8215

PPC1−B 28.90
PPC1−B 8169
PPC_CAL_STD

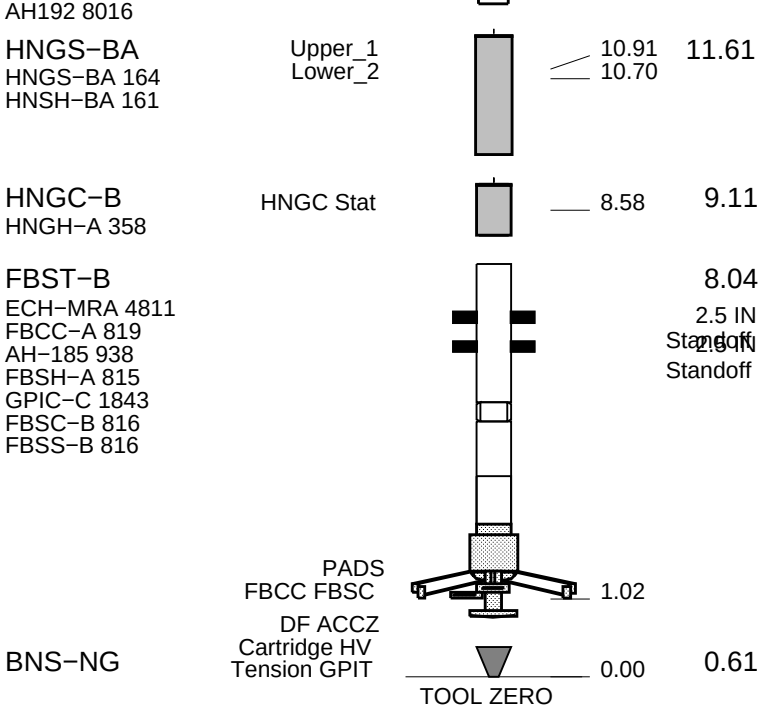
MAPC−B 26.91
MAPC−BA 8038
ECH−SF 8038
MAMS−BA 8048

MAXS−B 20.50
MASS−BA 8038
MAXS−BA 8044

EMS−B 14.33
EMA−B 8002
RES
EMC−B 8027
ECH−KH 8028



MAXIMUM STRING DIAMETER 8.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

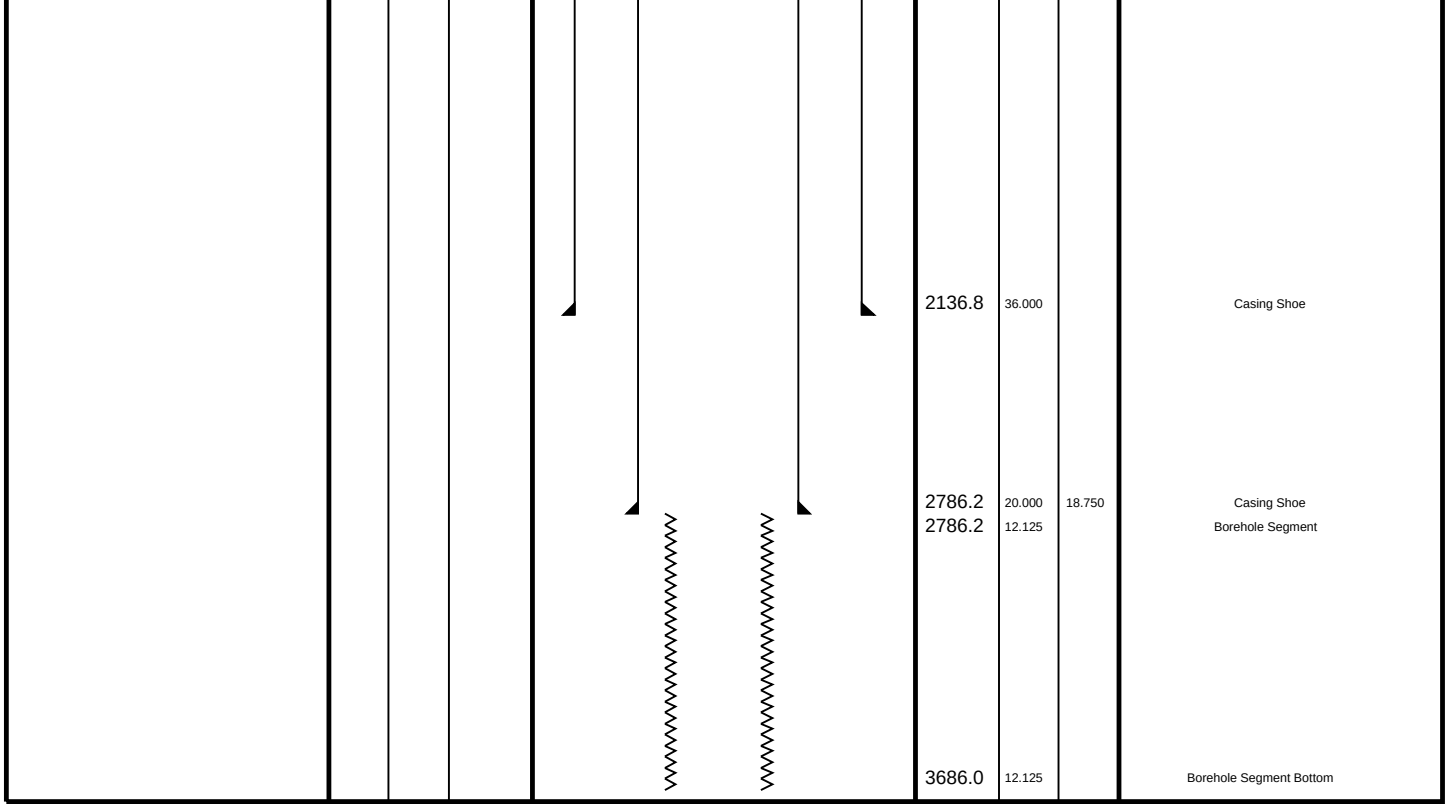


MAXIMUM STRING DIAMETER 8.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Client: CDEX
Well: C0009A
Field: Nankai Trough
State: Wakayama
Country: JAPAN

Drawing Date: 7/11/2009
Rig Name: Chikyu
Reference Datum: Mean Sea Level
Elevation: 28.3 m

Production String	(in) OD	(in) ID	(m) MD	Well Schematic	(m) MD	(in) OD	(in) ID	Casing String
Derrick Floor Elevation			28.3					
Mean Sea Level			0.0					
					2082.3	36.000		Casing String



Schlumberger

Main Log
1:500

MAXIS Field Log

Company: CDEX **Well: C0009A**

Input DLIS Files

DEFAULT	MERGE_EMS_HRLA_TLD_025GUP	FN:1	PRODUCER	13−Aug−2009 12:50	3670.2 M	2755.7 M

Output DLIS Files

DEFAULT	EMS_HRLA_TLD_MCFL_029PUP	FN:65	PRODUCER	13−Aug−2009 13:36	3670.2 M	2761.3 M
CLIENT	EMS_HRLA_TLD_MCFL_029PUC	FN:66	CUSTOMER	13−Aug−2009 13:36	3670.2 M	2761.3 M

OP System Version: 17C0−154

EMS−B	17C0−154	HRLT−B	17C0−154
HILTH−FTB	17C0−154	SPA−A	17C0−154
DTC−H	17C0−154	MAXS−B	SKK−3704−MAST
MARC−B	SKK−3704−MAST		

MAPC-B SKR-3704-MAST

PIP SUMMARY

Time Mark Every 60 S

	SP (SP) −80 (MV) 20		
	HILT Caliper (HCAL) 10 (IN) 20	HRLT Resistivity 5 (RLA5) 0 (OHMM) 20	
Calibrated Downhole Force (CDF) (LBF) −200 1800	Gamma Ray (GR) 50 (GAPI) 150	HRLT Resistivity 2 (RLA2) 0 (OHMM) 20	Env.Corr.Thermal Neutron Porosity (TNPH) 0.6 (V/V) 0	HRLT Conductivity (LC01) 1000 (MM/M) 0
Tension (TENS) (LBF) 0 2000	Bit Size (BS) 10 (IN) 20	Std. Res. Invaded Zone Resistivity (RXOZ) 0 (OHMM) 20	Std. Res. Formation Density (RHOZ) 1.7 (G/C3) 2.7	Compressional Slowness 3 (DTCO3) 240 (US/F) 40

TENS

SP

Caliper check in casing = 18.75 in.

Casing Shoe @ 2785.0 m

RLA2

RXOZ

2800

RHOZ

Sonic check in casing = 57 us/ft

LC01

HCAL

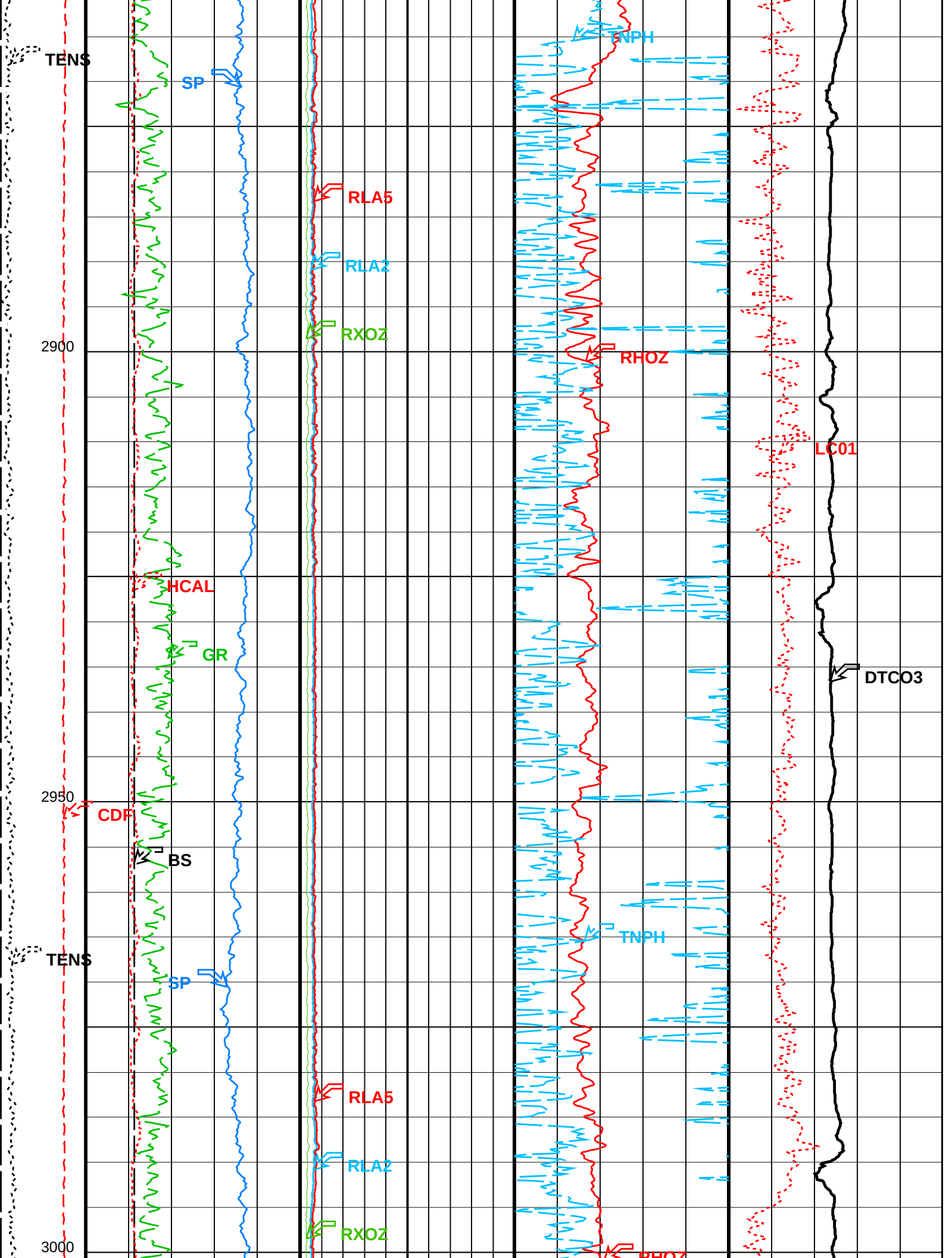
GR

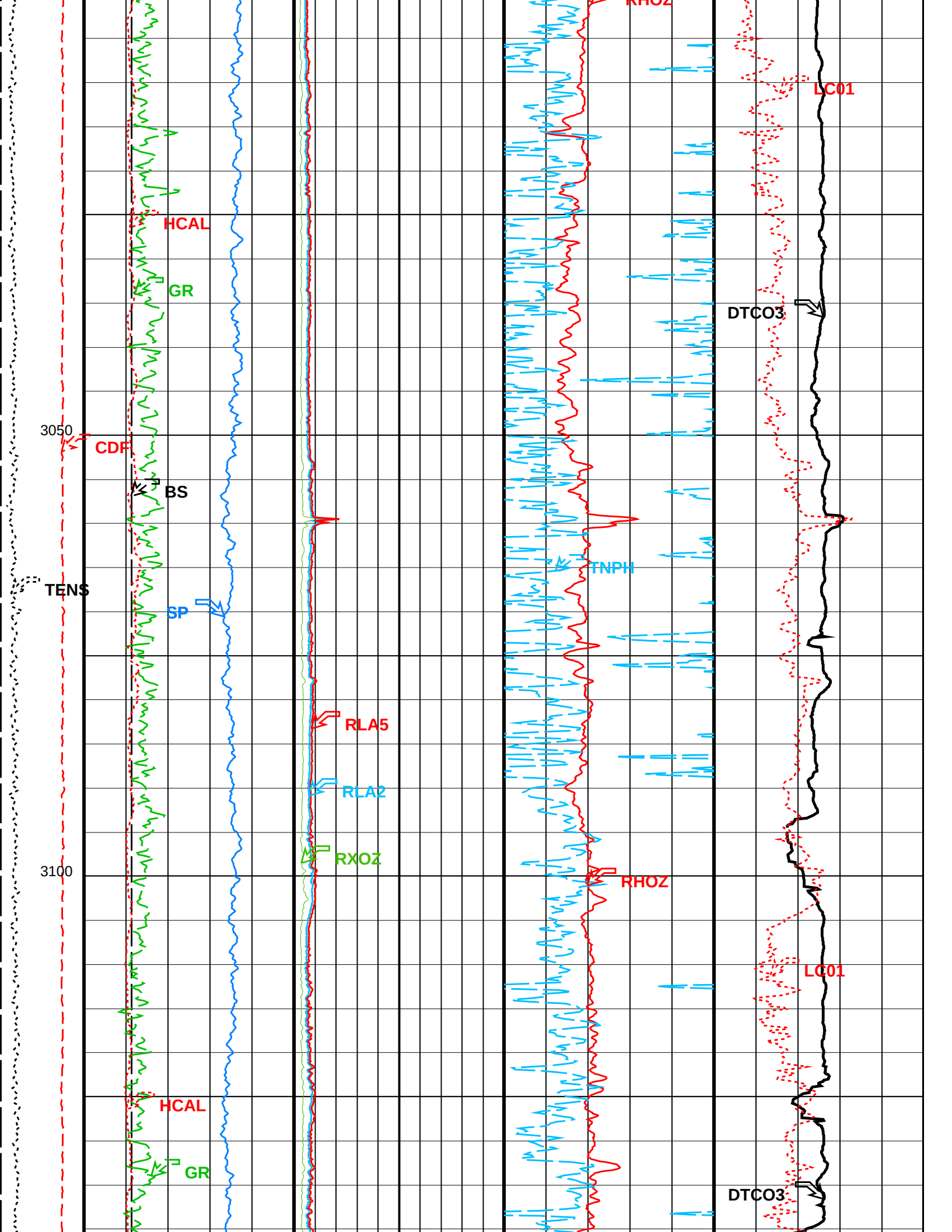
DTCO3

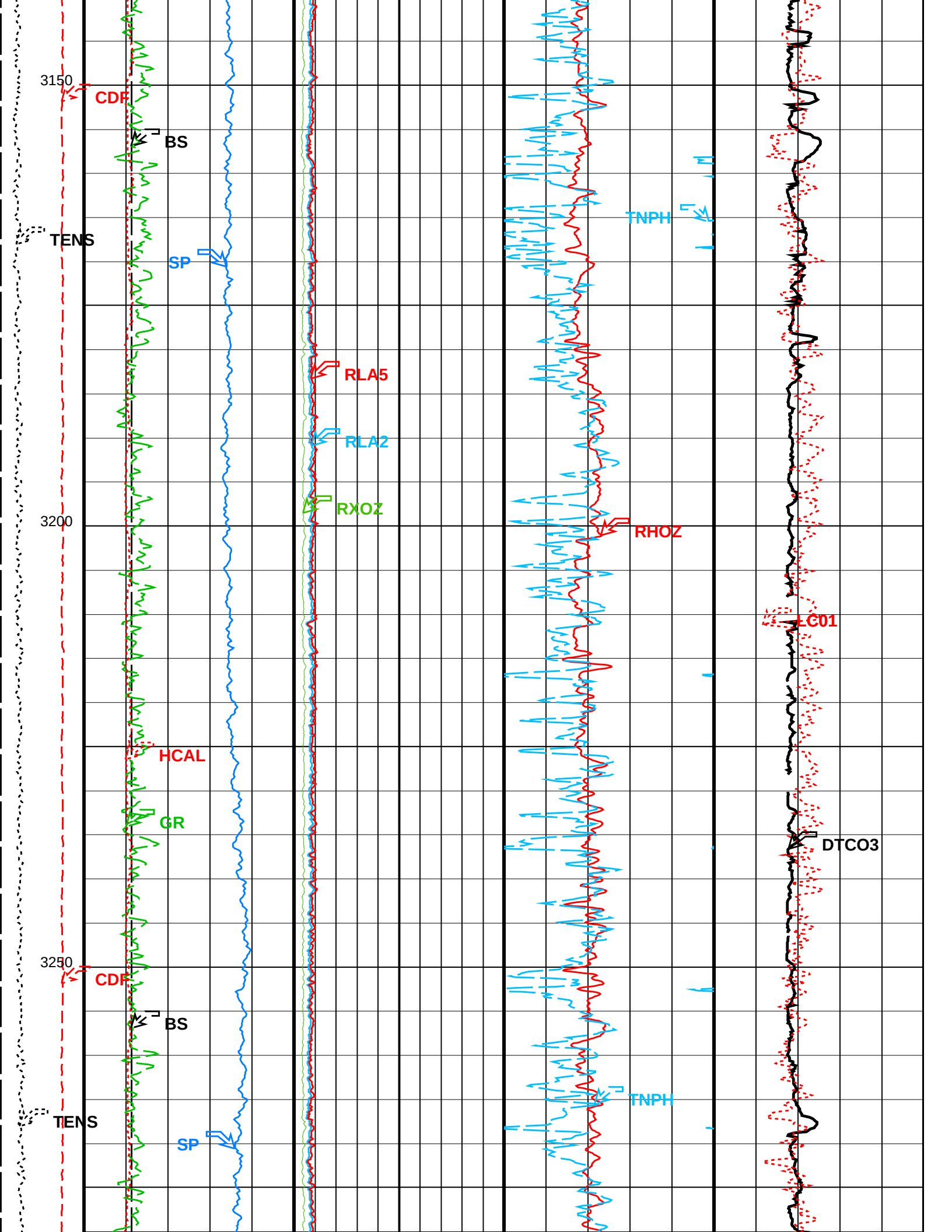
2850

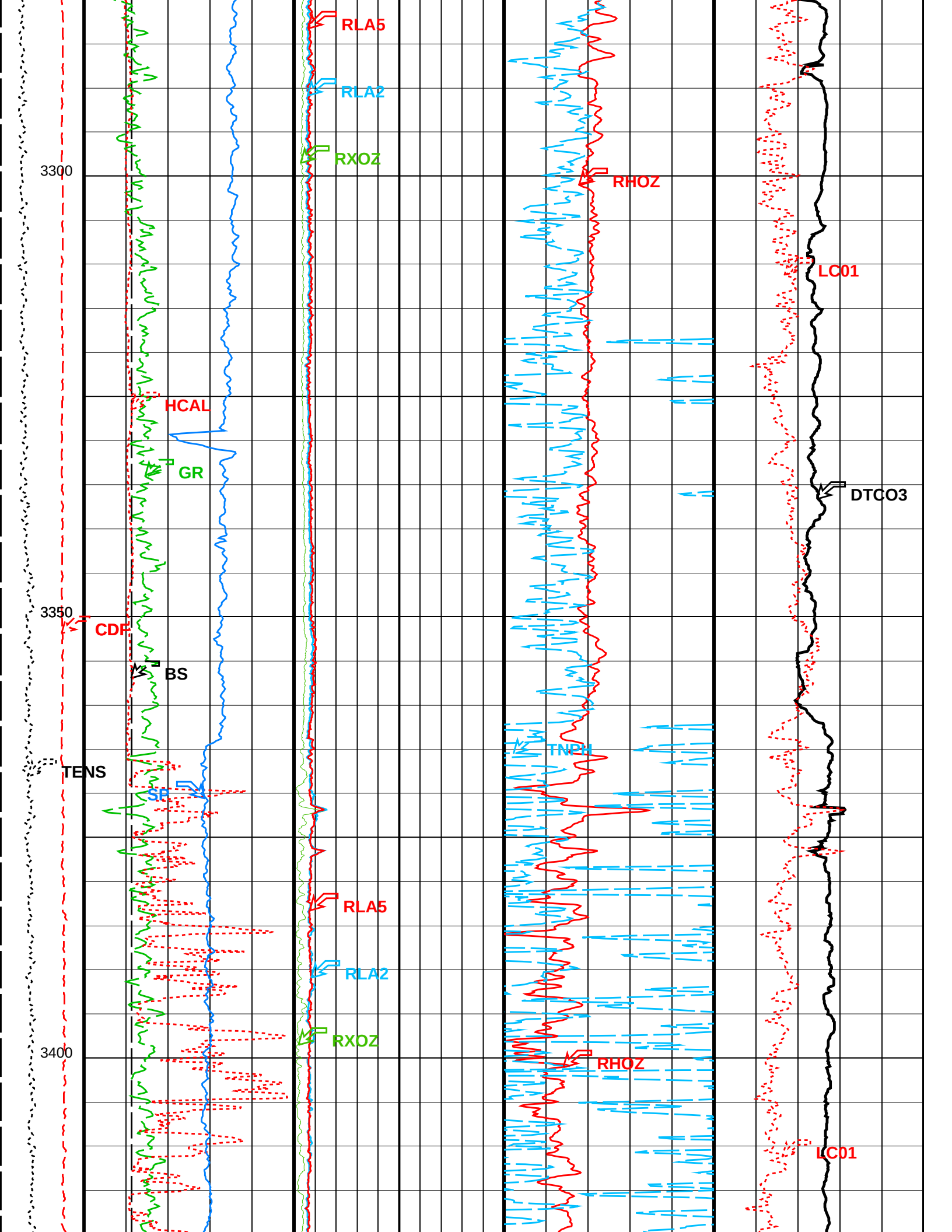
CDF

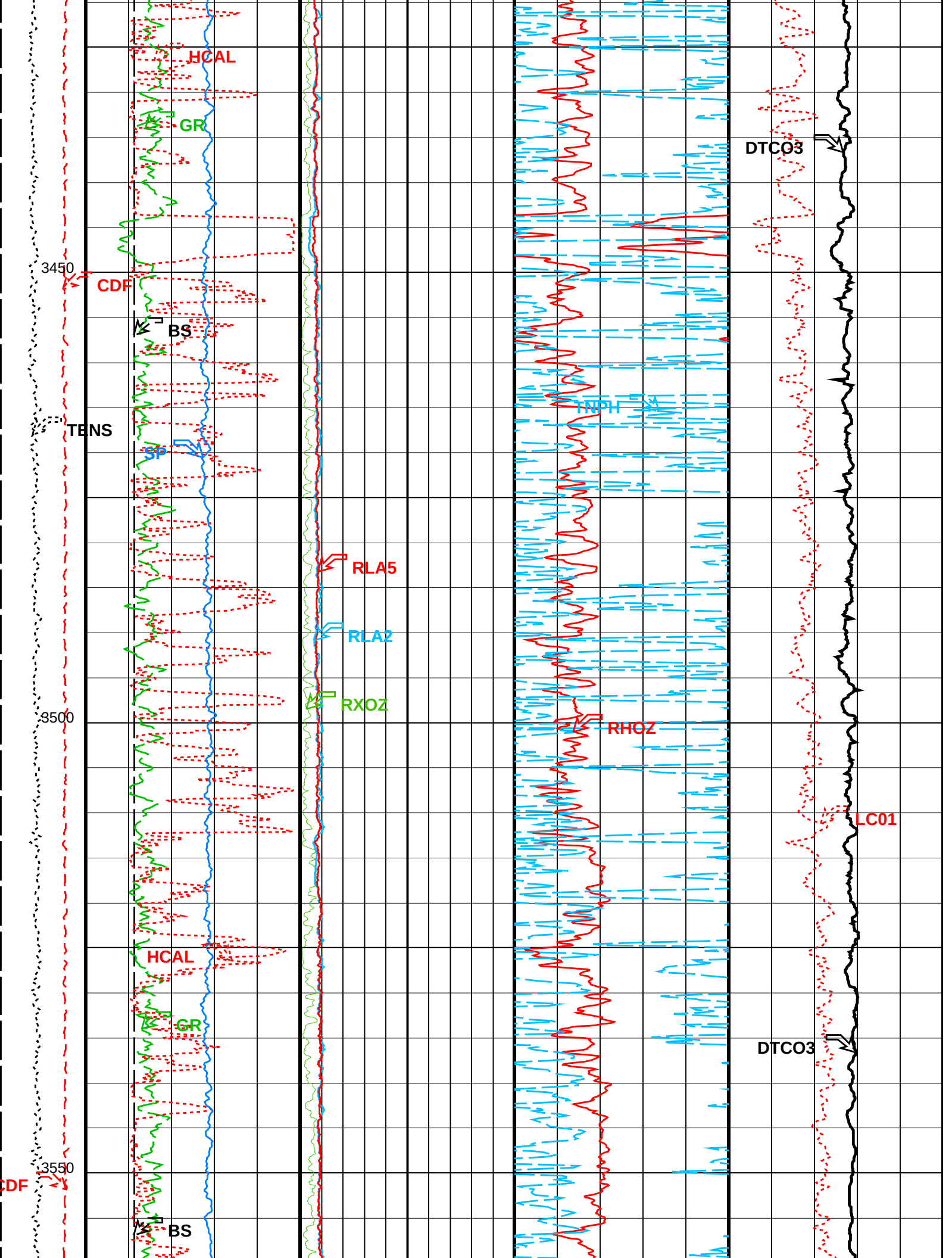
BS

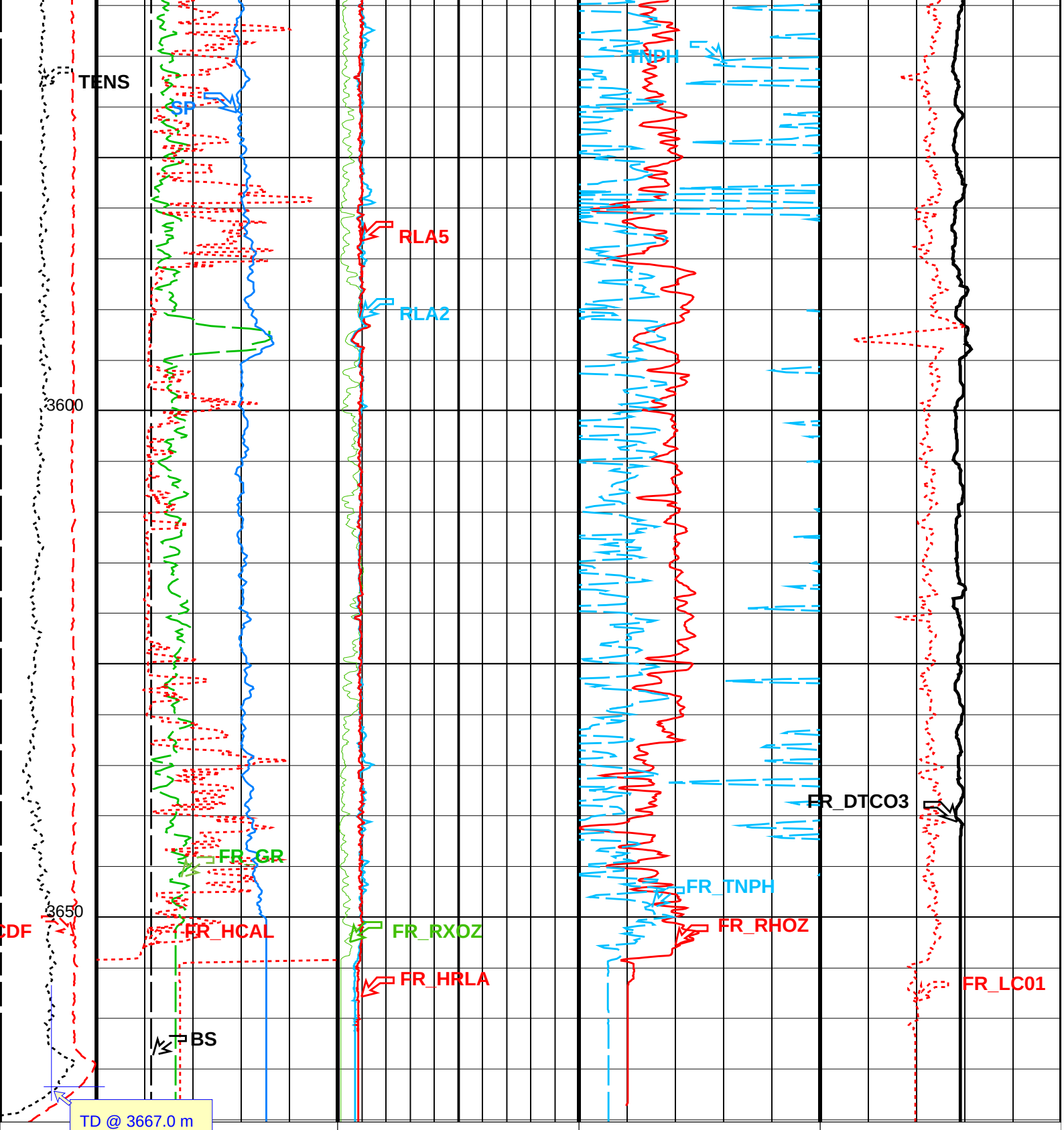

TENS
SP
RLA5
RLA2
RXOZ
TNPH
RHOZ
LC01
DTCO3
HCAL
GR
CDF
BS
TENS
SP
RLA5
RLA2
RXOZ
TNPH
2900
2950
3000


RHOZ
LC01
HCAL
GR
DTCO3
3050
CDF
BS
TENS
TNPH
SP
RLA5
RLA2
RXOZ
3100
RHOZ
LC01
HCAL
GR
DTCO3


3150
CDF
BS
TENS
SP
TNPH
RLA5
RLA2
RXOZ
3200
RHOZ
LC01
HCAL
GR
DTCO3
3250
CDF
BS
TENS
SP
TNPH


RLA5
RLA2
RXOZ
RHOZ
LC01
HCAL
GR
DTCO3
CDF
BS
TENS
SP
TNPH
RLA5
RLA2
RXOZ
RHOZ
LC01
3300
3350
3400


HCAL
GR
DTCO3
3450
CDF
BS
TENS
SP
INPH
RLA5
RLA2
RXOZ
3500
RHOZ
LC01
HCAL
GR
DTCO3
3550
CDF
BS



Tension (TENS) (LBF)	Bit Size (BS)	Std. Res. Invaded Zone Resistivity (RXOZ)	Std. Res. Formation Density (RHOZ)	Compressional Slowness 3 (DTCO3)
0 2000	10 (IN) 20	0 (OHMM) 20	1.7 (G/C3) 2.7	240 (US/F) 40
Calibrated Downhole Force (CDF) (LBF)	**Gamma Ray (GR)**	**HRLT Resistivity 2 (RLA2)**	**Env.Corr.Thermal Neutron Porosity (TNPH)**	**HRLT Conductivity (LC01)**
−200 1800	50 (GAPI) 150	0 (OHMM) 20	0.6 (V/V) 0	1000 (MM/M) 0
	HILT Caliper (HCAL)	**HRLT Resistivity 5 (RLA5)**		
	10 (IN) 20	0 (OHMM) 20		

SP (SP)		
−80	(MV)	20

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
KFAC_HRLT	HRLT K Factor Option	SONDE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	25	DEGC
	HILTH−FTB: High resolution Integrated Logging Tool−DTS		
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
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
GGRD	Geothermal Gradient	0.018227	DC/M
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	25	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
	SPA−A: SP ADAPTOR		
SPNV	SP Next Value	0	MV
	MAPC−B: Multimode Array Sonic Power Cartridge		
BHS	Borehole Status	OPEN	
BS	Bit Size	12.250	IN
DCRMVL	DC Offset Removal Option	DC_MULTIPLE	
DLHS	Hole Diameter Source for SOBS Channel	AUTO	
DTF	Delta−T Fluid	190	US/F
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	25	DEGC
	STI: Stuck Tool Indicator		
TDL	Total Depth − Logger	3667.00	M
	System and Miscellaneous		
BSAL	Borehole Salinity	110000.00	PPM
DO	Depth Offset for Playback	0.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	OFF	

Format: Merge 500 Vertical Scale: 1:500 Graphics File Created: 13−Aug−2009 13:36

OP System Version: 17C0−154

EMS−B	17C0−154	HRLT−B	17C0−154
HILTH−FTB	17C0−154	SPA−A	17C0−154
DTC−H	17C0−154	MAXS−B	SKK−3704−MAST
MAPC−B	SKK−3704−MAST		

Input DLIS Files

DEFAULT	MERGE_EMS_HRLA_TLD_025GUP	FN:1	PRODUCER	13−Aug−2009 12:50	3670.2 M	2755.7 M

Output DLIS Files

DEFAULT	**EMS_HRLA_TLD_MCFL_029PUP**	**FN:65**	**PRODUCER**	**13−Aug−2009 13:36**
CLIENT	**EMS_HRLA_TLD_MCFL_029PUC**	**FN:66**	**CUSTOMER**	**13−Aug−2009 13:36**

Schlumberger

Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Environment Measurement Sonde Wellsite Calibration − EMS Caliper Calibration							
Before: 11−Jul−2009 23:37							
Radius 1 Short Radius	4.000	N/A	3.627	N/A	N/A	0.2000	IN
Radius 1 Long Radius	8.000	N/A	7.897	N/A	N/A	0.2000	IN
Radius 2 Short Radius	4.000	N/A	3.405	N/A	N/A	0.2000	IN
Radius 2 Long Radius	8.000	N/A	7.651	N/A	N/A	0.2000	IN
Radius 3 Short Radius	4.000	N/A	3.595	N/A	N/A	0.2000	IN
Radius 3 Long Radius	8.000	N/A	7.818	N/A	N/A	0.2000	IN
Radius 4 Short Radius	4.000	N/A	3.824	N/A	N/A	0.2000	IN
Radius 4 Long Radius	8.000	N/A	8.065	N/A	N/A	0.2000	IN
Radius 5 Short Radius	4.000	N/A	3.791	N/A	N/A	0.2000	IN
Radius 5 Long Radius	8.000	N/A	8.051	N/A	N/A	0.2000	IN
Radius 6 Short Radius	4.000	N/A	3.728	N/A	N/A	0.2000	IN
Radius 6 Long Radius	8.000	N/A	7.967	N/A	N/A	0.2000	IN
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M01							
Before: 12−Jul−2009 3:18							
HRLT M0−M1 Voltage Plus − 0	0	N/A	−316.4	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 1	0	N/A	−325.5	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 2	0	N/A	−317.9	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 3	0	N/A	−320.9	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 4	0	N/A	−314.2	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 5	0	N/A	−319.8	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 6	0	N/A	319.2	N/A	N/A	9.681	UV
HRLT M0−M1 Voltage Plus − 7	0	N/A	−322.7	N/A	N/A	9.681	UV
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M12							
Before: 12−Jul−2009 3:18							
HRLT M1−M2 Voltage Plus − 0	0	N/A	1749	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 1	0	N/A	1800	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 2	0	N/A	1753	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 3	0	N/A	1769	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 4	0	N/A	1733	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 5	0	N/A	1764	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 6	0	N/A	−1773	N/A	N/A	53.42	UV
HRLT M1−M2 Voltage Plus − 7	0	N/A	1781	N/A	N/A	53.42	UV
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M23							
Before: 12−Jul−2009 3:18							
HRLT M2−M3 Voltage Plus − 0	0	N/A	1738	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 1	0	N/A	1793	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 2	0	N/A	1749	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 3	0	N/A	1770	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 4	0	N/A	1730	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 5	0	N/A	1764	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 6	0	N/A	−1754	N/A	N/A	53.42	UV
HRLT M2−M3 Voltage Plus − 7	0	N/A	1781	N/A	N/A	53.42	UV
High Resolution Laterolog Array − B Wellsite Calibration − HRLT V34							
Before: 12−Jul−2009 3:18							
HRLT A3−A4 Voltage Plus − 0	0	N/A	68360	N/A	N/A	2100	UV

HRLT A3−A4 Voltage Plus − 1	0	N/A	70650	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 2	0	N/A	69170	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 3	0	N/A	70140	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 4	0	N/A	68390	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 5	0	N/A	69680	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 6	0	N/A	−68180	N/A	N/A	2100	UV
HRLT A3−A4 Voltage Plus − 7	0	N/A	70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT V45
Before: 12−Jul−2009 3:18

HRLT A4−A5 Voltage Plus − 0	0	N/A	68340	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 1	0	N/A	70770	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 2	0	N/A	69260	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 3	0	N/A	70190	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 4	0	N/A	68390	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 5	0	N/A	69660	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 6	0	N/A	−68320	N/A	N/A	2100	UV
HRLT A4−A5 Voltage Plus − 7	0	N/A	70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT V56
Before: 12−Jul−2009 3:18

HRLT A5−A6 Voltage Plus − 0	0	N/A	68600	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 1	0	N/A	71030	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 2	0	N/A	69500	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 3	0	N/A	70440	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 4	0	N/A	68640	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 5	0	N/A	69930	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 6	0	N/A	−68520	N/A	N/A	2100	UV
HRLT A5−A6 Voltage Plus − 7	0	N/A	70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT VTP
Before: 12−Jul−2009 3:18

HRLT Torpedo−M0 Voltage − 0	0	N/A	−68120	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 1	0	N/A	−70960	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 2	0	N/A	−69440	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 3	0	N/A	−70410	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 4	0	N/A	−68600	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 5	0	N/A	−69880	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 6	0	N/A	68420	N/A	N/A	2100	UV
HRLT Torpedo−M0 Voltage − 7	0	N/A	−70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT VBD
Before: 12−Jul−2009 3:18

HRLT Bridle#9−M0 Voltage − 0	0	N/A	−68130	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 1	0	N/A	−70950	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 2	0	N/A	−69440	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 3	0	N/A	−70410	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 4	0	N/A	−68610	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 5	0	N/A	−69880	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 6	0	N/A	68420	N/A	N/A	2100	UV
HRLT Bridle#9−M0 Voltage − 7	0	N/A	−70000	N/A	N/A	2100	UV

High Resolution Laterolog Array − B Wellsite Calibration − HRLT ISO
Before: 12−Jul−2009 3:18

HRLT Source Current Plus − 0	0	N/A	283.7	N/A	N/A	8.520	UA
HRLT Source Current Plus − 1	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 2	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 3	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 4	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 5	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 6	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus − 7	0	N/A	281.1	N/A	N/A	8.520	UA

High Resolution Laterolog Array − B Wellsite Calibration − HRLT MV
Before: 12−Jul−2009 3:18

HRLT Vertical Voltage Pl − 0	0	N/A	−320.2	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 1	0	N/A	−322.1	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 2	0	N/A	−313.4	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 3	0	N/A	−314.7	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 4	0	N/A	−305.2	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 5	0	N/A	−325.5	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 6	0	N/A	328.8	N/A	N/A	9.681	UV
HRLT Vertical Voltage Pl − 7	0	N/A	−322.7	N/A	N/A	9.681	UV

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Stab Measurement Summary
Before: 12−Jul−2009 0:20

BS Window Ratio	0.7445	N/A	0.7439	N/A	N/A	N/A	
BS Window Sum	27090	N/A	27070	N/A	N/A	N/A	CPS
SS Window Ratio	0.4832	N/A	0.4839	N/A	N/A	N/A	
SS Window Sum	11550	N/A	11540	N/A	N/A	N/A	CPS
LS Window Ratio	0.2926	N/A	0.2954	N/A	N/A	N/A	
LS Window Sum	1253	N/A	1251	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Photo−multiplier High Voltages Calibrations
Before: 12−Jul−2009 0:20

BS PM High Voltage (Command)	1557	N/A	1555	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1608	N/A	1607	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1432	N/A	1438	N/A	N/A	N/A	V

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Crystal Quality Resolutions Calibration
Before: 12−Jul−2009 0:20

BS Crystal Resolution	12.45	N/A	12.29	N/A	N/A	N/A	%
SS Crystal Resolution	9.204	N/A	9.168	N/A	N/A	N/A	%
LS Crystal Resolution	8.148	N/A	8.234	N/A	N/A	N/A	%

High resolution Integrated Logging Tool−DTS Wellsite Calibration − MCFL Calibration
Before: 12−Jul−2009 1:48

Raw B0 Resistivity	3875	N/A	3868	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3812	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3866	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool−DTS Wellsite Calibration − HILT Caliper Calibration
Before: 12−Jul−2009 0:30

HILT Caliper Zero Measurement	8.000	N/A	8.514	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.40	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Detector Calibration
Before: 12−Jul−2009 0:21

Gamma Ray Background	30.00	N/A	4.160	N/A	N/A	N/A	GAPI
Gamma Ray (Jig − Bkgd)	160.0	N/A	184.7	N/A	N/A	14.55	GAPI

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Zero Measurement
Master: 29−Jun−2009 23:18 Before: 12−Jul−2009 0:22

CNTC Background	28.54	28.54	27.66	N/A	N/A	4.281	CPS
CFTC Background	30.72	30.72	29.47	N/A	N/A	4.608	CPS

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Ratio Measurement
Master: 29−Jun−2009 23:18

Thermal Near Corr. (Tank)	5800	2617	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	1121	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.335	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool−DTS Wellsite Calibration − Accelerometer Calibration
Before: 12−Jul−2009 0:21

Z−Axis Acceleration	9.810	N/A	9.781	N/A	N/A	N/A	M/S2

High resolution Integrated Logging Tool−DTS Master Calibration − Inversion results
Master: 3−Jul−2009 18:59

Rho Aluminum	2.596	2.597	−−	−−	−−	−−	G/C3
Rho Magnesium	1.686	1.688	−−	−−	−−	−−	G/C3
Pe Aluminum	2.570	2.516	−−	−−	−−	−−	
Pe Magnesium	2.650	2.634	−−	−−	−−	−−	

High resolution Integrated Logging Tool−DTS Master Calibration − Deviation Summary
Master: 3−Jul−2009 18:59

BS Average Deviation	0	0.2800	−−	−−	−−	−−	%
BS Max Deviation	0	0.6805	−−	−−	−−	−−	%
SS Average Deviation	0	0.4310	−−	−−	−−	−−	%
SS Max Deviation	0	1.992	−−	−−	−−	−−	%
LS Average Deviation	0	0.6905	−−	−−	−−	−−	%
LS Max Deviation	0	1.788	−−	−−	−−	−−	%

The GLS−VJ source activity is acceptable.

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

NCT−B Water Temperature 27.0 DEGC.
Thermal Housing Size 3.375 IN.
NSR−F serial number 5228

Environment Measurement Sonde / Equipment Identification

Primary Equipment:

EMS Mechanical		EMM − B	8023
EMS Cartridge		EMC − B	8027
EMS Adaptor		EMA − B	8002

Resistivity Meter	RES −	
Auxiliary Equipment:		
Electronics Cartridge Housing	ECH − KH	8028

Environment Measurement Sonde Wellsite Calibration

EMS Caliper Calibration

Phase	Radius 1 Short Radius IN	Value	Phase	Radius 1 Long Radius IN	Value
Before		3.627	Before		7.897
	3.000 (Minimum) 4.000 (Nominal) 5.000 (Maximum)			7.000 (Minimum) 8.000 (Nominal) 9.000 (Maximum)	

Phase	Radius 2 Short Radius IN	Value	Phase	Radius 2 Long Radius IN	Value
Before		3.405	Before		7.651
	3.000 (Minimum) 4.000 (Nominal) 5.000 (Maximum)			7.000 (Minimum) 8.000 (Nominal) 9.000 (Maximum)	

Phase	Radius 3 Short Radius IN	Value	Phase	Radius 3 Long Radius IN	Value
Before		3.595	Before		7.818
	3.000 (Minimum) 4.000 (Nominal) 5.000 (Maximum)			7.000 (Minimum) 8.000 (Nominal) 9.000 (Maximum)	

Phase	Radius 4 Short Radius IN	Value	Phase	Radius 4 Long Radius IN	Value
Before		3.824	Before		8.065
	3.000 (Minimum) 4.000 (Nominal) 5.000 (Maximum)			7.000 (Minimum) 8.000 (Nominal) 9.000 (Maximum)	

Phase	Radius 5 Short Radius IN	Value	Phase	Radius 5 Long Radius IN	Value
Before		3.791	Before		8.051
	3.000 (Minimum) 4.000 (Nominal) 5.000 (Maximum)			7.000 (Minimum) 8.000 (Nominal) 9.000 (Maximum)	

Phase	Radius 6 Short Radius IN	Value	Phase	Radius 6 Long Radius IN	Value
Before		3.728	Before		7.967
	3.000 (Minimum) 4.000 (Nominal) 5.000 (Maximum)			7.000 (Minimum) 8.000 (Nominal) 9.000 (Maximum)	

Before: 11−Jul−2009 23:37

High Resolution Laterolog Array − B / Equipment Identification

Primary Equipment:		
HRLT Sonde	HRLS − B	846
Auxiliary Equipment:		
HRLT lower Housing	HRLH − B	849
HRLT Lower Cartridge	HRLC − B	847
HRLT upper Housing	HRUH − B	755
HRLT Upper Cartridge	HRUC − B	755

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M01

Idx	Phase	HRLT M0−M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−316.4	−322.7	−280.7	−379.7
1	Before		−325.5	−322.7	−280.7	−379.7
2	Before		−317.9	−322.7	−280.7	−379.7
3	Before		−320.9	−322.7	−280.7	−379.7
4	Before		−314.2	−322.7	−280.7	−379.7
5	Before		−319.8	−322.7	−280.7	−379.7
6	Before		319.2	322.7	379.7	280.7
7	Before		−322.7	−322.7	−280.7	−379.7
		(Minimum) (Nominal) (Maximum)				

Before: 12−Jul−2009 3:18

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M12

Idx	Phase	HRLT M1−M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1749	1781	2095	1549
1	Before		1800	1781	2095	1549
2	Before		1753	1781	2095	1549
3	Before		1769	1781	2095	1549
4	Before		1733	1781	2095	1549
5	Before		1764	1781	2095	1549
6	Before		−1773	−1781	−1549	−2095
7	Before		1781	1781	2095	1549
		(Minimum) (Nominal) (Maximum)				

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High Resolution Laterolog Array − B Wellsite Calibration

HRLT M23

Idx	Phase	HRLT M2−M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1738	1781	2095	1549
1	Before		1793	1781	2095	1549
2	Before		1749	1781	2095	1549
3	Before		1770	1781	2095	1549
4	Before		1730	1781	2095	1549
5	Before		1764	1781	2095	1549
6	Before		−1754	−1781	−1549	−2095
7	Before		1781	1781	2095	1549
		(Minimum) (Nominal) (Maximum)				

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High Resolution Laterolog Array − B Wellsite Calibration

HRLT V34

Idx	Phase	HRLT A3−A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68360	70000	82360	60900
1	Before		70650	70000	82360	60900
2	Before		69170	70000	82360	60900
3	Before		70140	70000	82360	60900
4	Before		68390	70000	82360	60900
5	Before		69680	70000	82360	60900
6	Before		−68180	−70000	−60900	−82360
7	Before		70000	70000	82360	60900
		(Minimum) (Nominal) (Maximum)				

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High Resolution Laterolog Array − B Wellsite Calibration

HRLT V45

Idx	Phase	HRLT A4−A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68340	70000	82360	60900
1	Before		70770	70000	82360	60900
2	Before		69260	70000	82360	60900
3	Before		70190	70000	82360	60900
4	Before		68390	70000	82360	60900
5	Before		69660	70000	82360	60900

6	Before		−68320	−70000	−60900	−82360
7	Before		70000	70000	82360	60900
		(Minimum) (Nominal) (Maximum)				

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High Resolution Laterolog Array − B Wellsite Calibration

HRLT V56

Idx	Phase	HRLT A5−A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68600	70000	82360	60900
1	Before		71030	70000	82360	60900
2	Before		69500	70000	82360	60900
3	Before		70440	70000	82360	60900
4	Before		68640	70000	82360	60900
5	Before		69930	70000	82360	60900
6	Before		−68520	−70000	−60900	−82360
7	Before		70000	70000	82360	60900
		(Minimum) (Nominal) (Maximum)				

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High Resolution Laterolog Array − B Wellsite Calibration

HRLT VTP

Idx	Phase	HRLT Torpedo−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68120	−70000	−60900	−82360
1	Before		−70960	−70000	−60900	−82360
2	Before		−69440	−70000	−60900	−82360
3	Before		−70410	−70000	−60900	−82360
4	Before		−68600	−70000	−60900	−82360
5	Before		−69880	−70000	−60900	−82360
6	Before		68420	70000	82360	60900
7	Before		−70000	−70000	−60900	−82360
		(Minimum) (Nominal) (Maximum)				

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High Resolution Laterolog Array − B Wellsite Calibration

HRLT VBD

Idx	Phase	HRLT Bridle#9−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68130	−70000	−60900	−82360
1	Before		−70950	−70000	−60900	−82360
2	Before		−69440	−70000	−60900	−82360
3	Before		−70410	−70000	−60900	−82360
4	Before		−68610	−70000	−60900	−82360
5	Before		−69880	−70000	−60900	−82360
6	Before		68420	70000	82360	60900
7	Before		−70000	−70000	−60900	−82360
		(Minimum) (Nominal) (Maximum)				

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High Resolution Laterolog Array − B Wellsite Calibration

HRLT ISO

Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		283.7	284.0	334.1	247.0

1	Before		281.1	281.1	330.7	244.4
2	Before		281.1	281.1	330.7	244.4
3	Before		281.1	281.1	330.7	244.4
4	Before		281.1	281.1	330.7	244.4
5	Before		281.1	281.1	330.7	244.4
6	Before		281.1	281.1	330.7	244.4
7	Before		281.1	281.1	330.7	244.4
		(Minimum) (Nominal) (Maximum)				

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High Resolution Laterolog Array − B Wellsite Calibration

HRLT MV

Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−320.2	−322.7	−280.7	−379.7
1	Before		−322.1	−322.7	−280.7	−379.7
2	Before		−313.4	−322.7	−280.7	−379.7
3	Before		−314.7	−322.7	−280.7	−379.7
4	Before		−305.2	−322.7	−280.7	−379.7
5	Before		−325.5	−322.7	−280.7	−379.7
6	Before		328.8	322.7	379.7	280.7
7	Before		−322.7	−322.7	−280.7	−379.7
		(Minimum) (Nominal) (Maximum)				

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High resolution Integrated Logging Tool−DTS / Equipment Identification

Primary Equipment:		
HILT high−Resolution Mechanical Sonde	HRMS − H	3846
HILT Rxo Gamma−ray Device	HRGD − H	3824
HILT Micro Cylindrically Focused Log Dev	MCFL − H	
GR Logging Source	GLS − VJ	3856
HILT High Res. Control Cartridge	HRCC − H	3794
HILT Gamma−Ray Neutron Sonde−DTS	HGNS − H	3840
HGNS Gamma−Ray Device	HGR −	
HGNS Neutron Detector with Alpha Source	HCNT − H	
Auxiliary Equipment:		
Neutron Calibration Tank	NCT − B	2138
Gamma Source Radioactive	GSR − Y	1005
HGNS Housing	HGNH −	2916

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		0.7439	Before		0.4839	Before		0.2954
	0.7073 (Minimum) 0.7445 (Nominal) 0.7817 (Maximum)			0.4591 (Minimum) 0.4832 (Nominal) 0.5074 (Maximum)			0.2779 (Minimum) 0.2926 (Nominal) 0.3072 (Maximum)	
Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		27070	Before		11540	Before		1251
	25730 (Minimum) 27090 (Nominal) 28440 (Maximum)			10980 (Minimum) 11550 (Nominal) 12130 (Maximum)			1190 (Minimum) 1253 (Nominal) 1315 (Maximum)	

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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		1555	Before		1607	Before		1438

1457 (Minimum)	1557 (Nominal)	1657 (Maximum)		1508 (Minimum)	1608 (Nominal)	1708 (Maximum)		1332 (Minimum)	1432 (Nominal)	1532 (Maximum)

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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		12.29	Before		9.168	Before		8.234
11.45 (Minimum)	12.45 (Nominal)	13.45 (Maximum)	8.204 (Minimum)	9.204 (Nominal)	10.20 (Maximum)	7.148 (Minimum)	8.148 (Nominal)	9.148 (Maximum)

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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		3868	Before		3812	Before		3866
3565 (Minimum)	3875 (Nominal)	4185 (Maximum)	3524 (Minimum)	3830 (Nominal)	4136 (Maximum)	3524 (Minimum)	3830 (Nominal)	4136 (Maximum)

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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		8.514	Before		12.40
6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)	9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)

Before: 12−Jul−2009 0:30

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig − Bkgd) GAPI	Value
Before		4.160	Before		184.7
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	152.3 (Minimum)	160.0 (Nominal)	200.0 (Maximum)

Before: 12−Jul−2009 0:21

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		28.54	Master		30.72
Before		27.66	Before		29.47
5.000 (Minimum)	28.54 (Nominal)	40.00 (Maximum)	5.000 (Minimum)	30.72 (Nominal)	40.00 (Maximum)

Master: 29−Jun−2009 23:18 Before: 12−Jul−2009 0:22

High resolution Integrated Logging Tool−DTS Wellsite Calibration

Ratio Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master	EXCEEDS LIMIT	2617	Master	EXCEEDS LIMIT	1121	Master		2.335
4700 (Minimum)	5800 (Nominal)	6900 (Maximum)	1900 (Minimum)	2400 (Nominal)	2900 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 29−Jun−2009 23:18

High resolution Integrated Logging Tool−DTS

Wellsite Calibration

Accelerometer Calibration

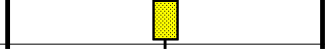
Phase	Z−Axis Acceleration M/S2	Value
Before		9.781
9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)

Before: 12−Jul−2009 0:21

High resolution Integrated Logging Tool−DTS Master Calibration

Inversion results

Phase	Rho Aluminum G/C3	Value	Phase	Rho Magnesium G/C3	Value

Phase		Value
Master		2.597
	2.586 (Minimum) 2.596 (Nominal) 2.606 (Maximum)	

Phase		Value
Master		1.688
	1.676 (Minimum) 1.686 (Nominal) 1.696 (Maximum)	

Phase	Pe Aluminum	Value
Master		2.516
	2.470 (Minimum) 2.570 (Nominal) 2.670 (Maximum)	

Phase	Pe Magnesium	Value
Master		2.634
	2.550 (Minimum) 2.650 (Nominal) 2.750 (Maximum)	

Master: 3−Jul−2009 18:59

High resolution Integrated Logging Tool−DTS Master Calibration

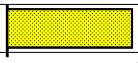
Deviation Summary

Phase	BS Average Deviation %	Value
Master		0.2800
	−0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)	

Phase	SS Average Deviation %	Value
Master		0.4310
	−1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)	

Phase	LS Average Deviation %	Value
Master		0.6905
	−1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)	

Phase	BS Max Deviation %	Value
Master		0.6805
	−1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)	

Phase	SS Max Deviation %	Value
Master		1.992
	−2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)	

Phase	LS Max Deviation %	Value
Master		1.788
	−3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)	

Master: 3−Jul−2009 18:59

High resolution Integrated Logging Tool−DTS Master Calibration

Zero Measurement

Phase	CNTC Background CPS	Value
Master		28.54
	5.000 (Minimum) 28.54 (Nominal) 40.00 (Maximum)	

Phase	CFTC Background CPS	Value
Master		30.72
	5.000 (Minimum) 30.72 (Nominal) 40.00 (Maximum)	

Master: 29−Jun−2009 23:18

High resolution Integrated Logging Tool−DTS Master Calibration

Tank Measurement

Phase	Thermal Near Corr. (Tank) CPS	Value
Master	EXCEEDS LIMIT	2617
	4700 (Minimum) 5800 (Nominal) 6900 (Maximum)	

Phase	Thermal Far Corr. (Tank) CPS	Value
Master	EXCEEDS LIMIT	1121
	1900 (Minimum) 2400 (Nominal) 2900 (Maximum)	

Phase	CNTC/CFTC (Tank)	Value
Master		2.335
	2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

Master: 29−Jun−2009 23:18

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	9799

Company: **CDEX**

Schlumberger

Well: **C0009A**

Field: **Kumanonada, Offshore Kii peninsula**

Rig: **Chikyu**

Country: **JAPAN**

Merged

3658.3m − 2785.0m
Suite 1, Run 1 (1:500)