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DEPTH SUMMARY LISTING

Date Created: 2-DEC-2004 15:29:34

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-E	Type:	CMTD-B/A	Type:	7-46ZV-XS
Serial Number:	1914	Serial Number:	2336	Serial Number:	74172
Calibration Date:	24-Mar-2004	Calibration Date:	28-Apr-2004	Length:	7324.04 M
Calibrator Serial Number:	9	Calibrator Serial Number:	1051	Conveyance Method:	Wireline
Calibration Cable Type:	7-46V-XS	Calibration Gain:	0.87	Rig Type:	Offshore_Fixed
Wheel Correction 1:	-5	Calibration Offset:	115.00		
Wheel Correction 2:	-5				

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	88.35 M
Rig Up Length At Bottom:	88.05 M
Rig Up Length Correction:	0.30 M
Stretch Correction:	1.30 M
Tool Zero Check At Surface:	0.00 M

Depth Control Remarks

1. First Run in Hole. Full Schlumberger depth procedure applied.
2. Primary depth reference IDW-E. Secondary depth reference Z-chart.
3. Log corrected for stretch.
4. Difference between rig up length at surface and bottom was 0.3m and was not applied to log.
- 5.
- 6.

DISCLAIMER

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OTHER SERVICES¹

OS1: VSI-GR
OS2: MDT-GR
OS3: MSCT-GR
OS4: FMI-DSI-HNGS
OS5:

REMARKS: RUN NUMBER 1

First run in hole. Full Schlumberger first run depth procedures applied. See Depth Summary Listing above.
Toolstring run as per tool sketch, with HRLT eccentred with 4x2.0" standoffs, bowspring on HGNS and on CMR.
PEX was logged in high resolution mode from TDL (3418.3m) to CS; GR was logged in standard resolution from CS to sea bed.
Objectives of this survey were to measure bound and free fluid porosities and evaluate permeability.
Logging speed in open hole was 600 ft/hr due to CMR, speed in casing 3600ft/hr for GR to sea bed.
CMR was logged in Expert Depth Log B Mode, with 2 wait times, Enhanced processing Mode enabled, and sequential acquisition.
Results were polarisation corrected, with a sample Interval of 7.5in. HI-deficit correction can be applied by Schlumberger DCS.
Long wait time: 3000 echoes at echo spacing of 0.2ms. 1 repetition.

Additional mud data: PV/YP = 49degC/51lbs/100ft², Gels = 3/4/7 lbs/100ft², LGS/HGS = 5.0/0.9%.

Standoff

High Res.

9.06

2.0 IN
Standoff
2.0 IN
Standoff

5.27

2.09

0.16

0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 7.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

AH-ECHKT
AH-ECHKT 84

SPE-A
SPE-AA 73

SP SPARC
DF
HTEN HMAS HV
Accelerom
Tension

Client: Origin Energy Resources Ltd.

Drawing Date: 12/2/2004

Well: Trefoil-1

Field: Trefoil

Rig Name: ENSCO 102

State: Tasmania

Reference Datum: Mean Sea Level

Country: Australia

Elevation: 39.6 m

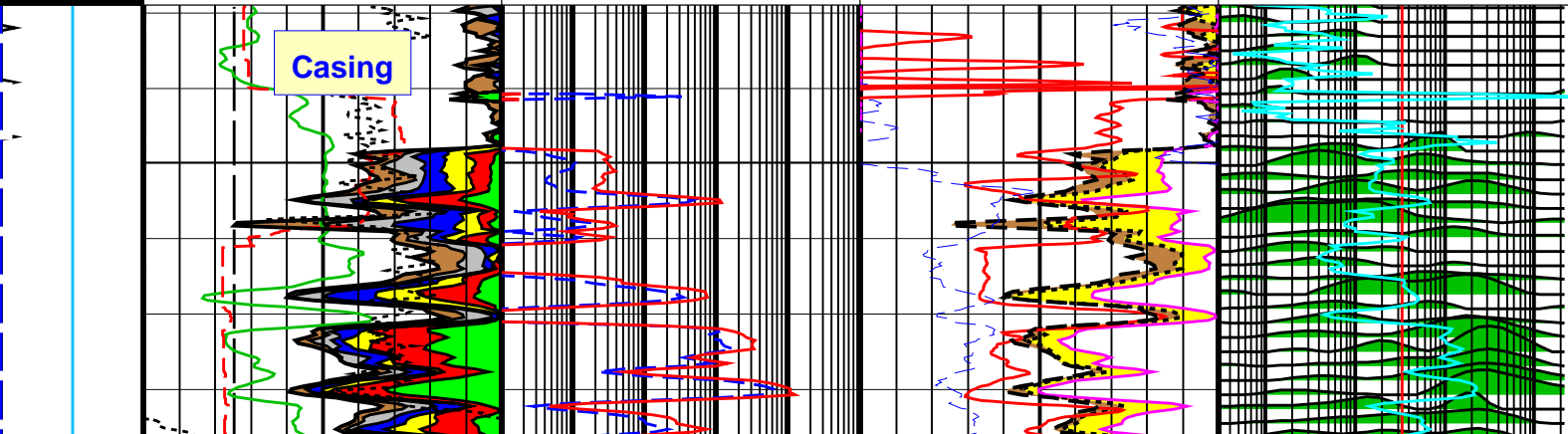
Production String	(in)		(m)	Well Schematic	(m)		(in)	Casing String
	OD	ID	MD		MD	OD	ID	
					0.0	36.000		Borehole Segment
					0.0	30.000		Casing String, 310 lb/ft
					142.6	30.000		Casing Shoe
					142.6	26.000		Borehole Segment
					0.0	20.000		Casing String, 133 lb/ft
					214.6	20.000		Casing Shoe
					214.6	16.000		Borehole Segment
					0.0	13.375		Casing String, 54.5 lb/ft
					659.6	13.375		Casing Shoe
					659.6	12.250		Borehole Segment
					0.0	9.625		Casing String, 43.5 lb/ft

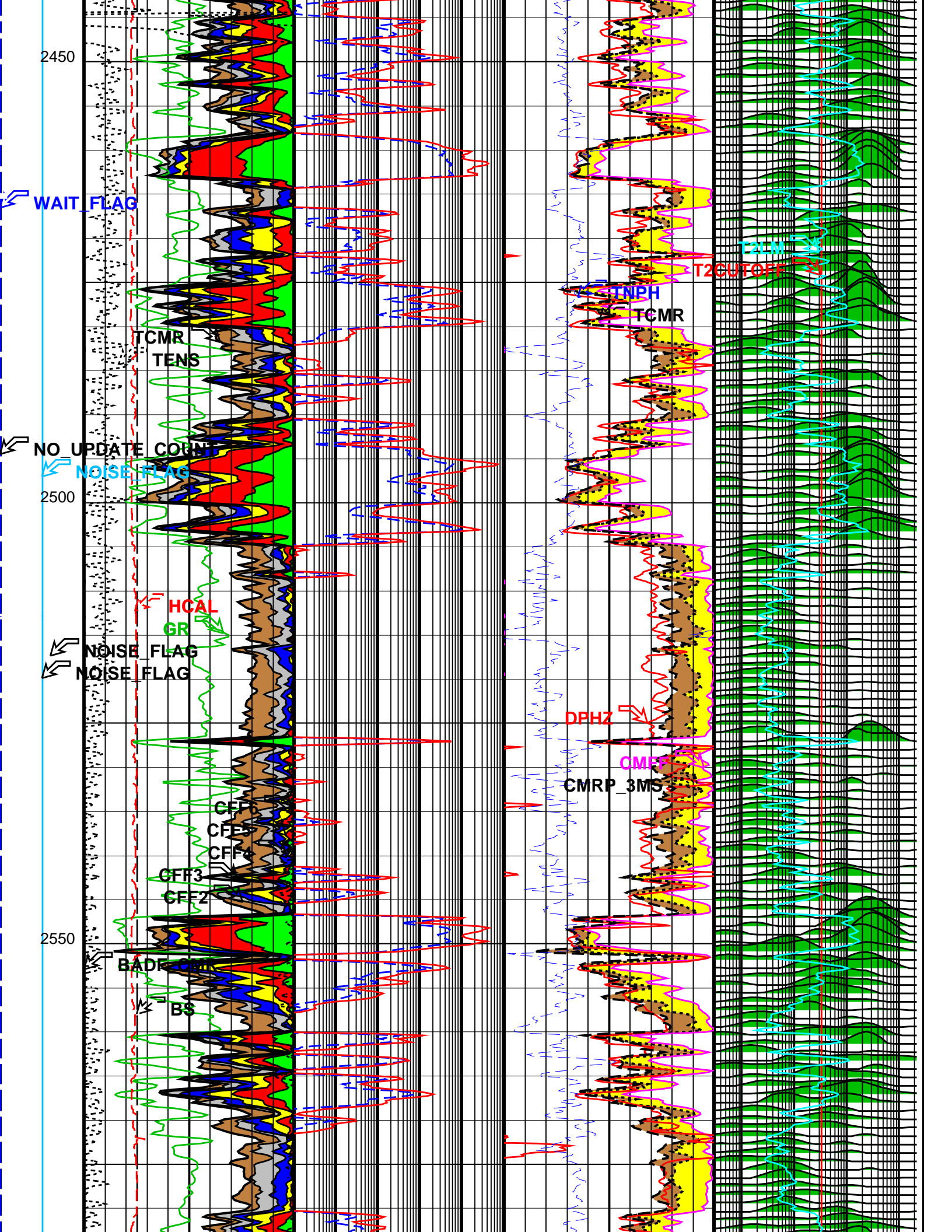
Log Direction: Up	Polarization Correction: On	EPM: Yes	EPM T1/T2: Auto
Despiking: Off	High Res: Off	KBFV: Off	DMRP: Off
Echo Spacing(us):	(200 200)		
Polarization Times(sec) for:	T1=1s: (infinity 0.02)	T1=3s: (infinity 0.02)	T1=5s: (13.83 0.02)
Number of Echoes:	(3000 30)		
Repetition:	(1 10)		
Regularization:	Auto		
T2 Min(msec): 0.3	T2 Max(msec): 3000	T2 Cutoff(msec): 33	T1/T2: 2
Number of Components: 30	Downhole Stacking: 3	Uphole Stacking: 1	First Echo Used: No
Multiple T2 Cutoffs(msec):	(0.3 1 3 10 33 100 300 1000 3000)		
Sample Int.(in): 7.5	Req Log Speed (f/h): 600		

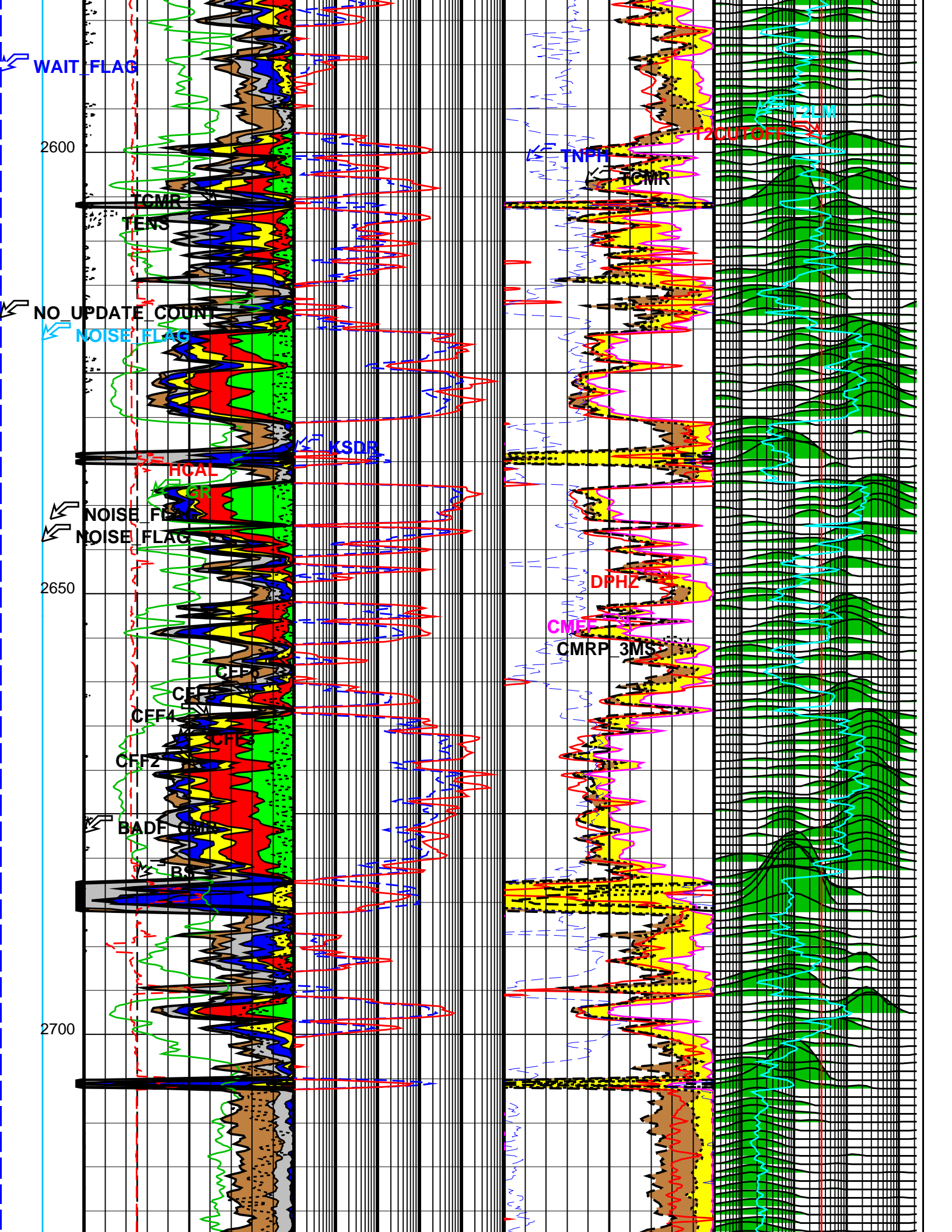
PIP SUMMARY

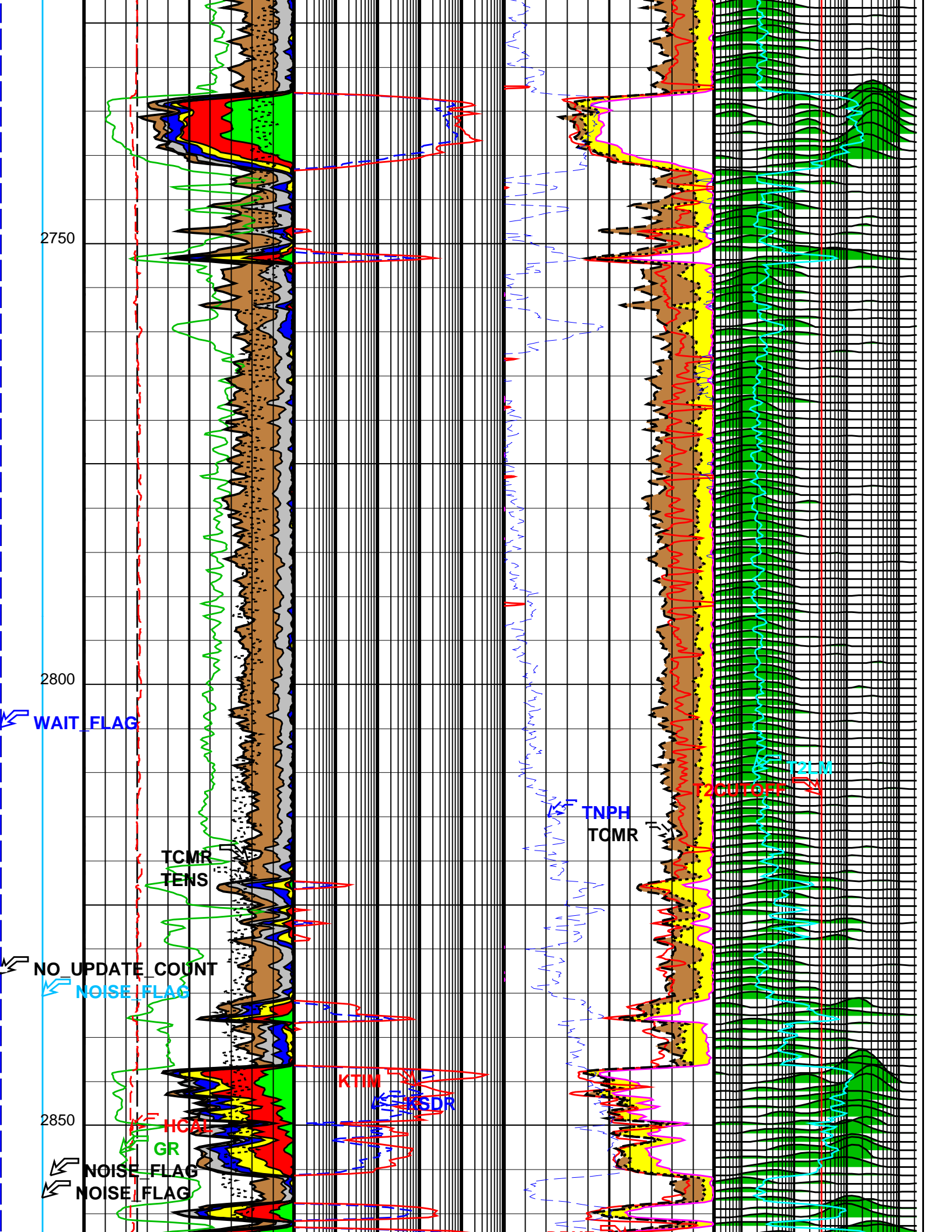
Time Mark Every 60 S

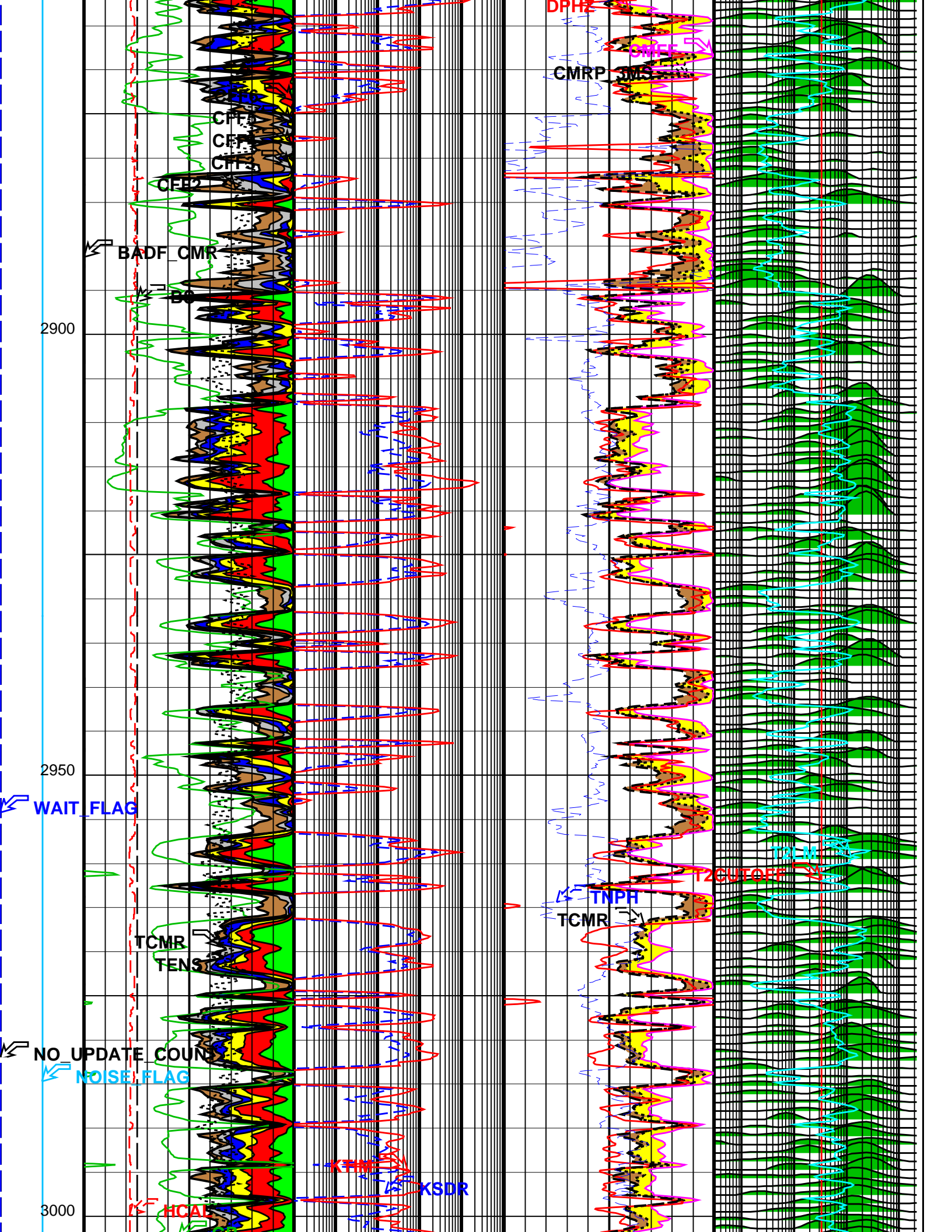
	<div>Bins 7-8</div> <div>Bin 6</div> <div>Bin 5</div> <div>Bin 4</div> <div>Bin 3</div> <div>Bins 1-2</div>		<div>Small Pore Porosity</div> <div>Capillary Bound Fluid Porosity</div>	
(NO_UPDATE_COUNT)	Tension (TENS) (LBF)		Total CMR Porosity (TCMR) (V/V)	
0 (----10)	1000 0		0.4 0	
Noise Out of Tolerance	HILT Caliper (HCAL) (IN)		Std. Res. Density Porosity (DPHZ) (V/V)	
	6 16		0.4 0	
Caution Moderate Noise	Gamma Ray (GR) (GAPI)		CMR Free Fluid Porosity (CMFF) (V/V)	T2 Distribution (T2_DIST_MW)
	0 200		0.4 0	60 (US) 89
Insuff. WT Flag	CMR Free Fluid Porosity for T2 Cutoff 2 (CFF2) (V/V)	Timur/Coates Permeability (KTIM) (MD)	CMR 3ms Porosity (CMRP_3MS) (V/V)	T2 Logarithmic Mean (T2LM) (MS)
	0.4 0	0.1 10000	0.4 0	0.3 3000
Bad Hole Flag	Bit Size (BS) (IN)	SDR Permeability (KS DR) (MD)	Env.Corr.Thermal Neutron Porosity (TNPH) (V/V)	Bound Fluid Cutoff (T2CUTOFF) (MS)
	6 16	0.1 10000	0.4 0	0.3 3000

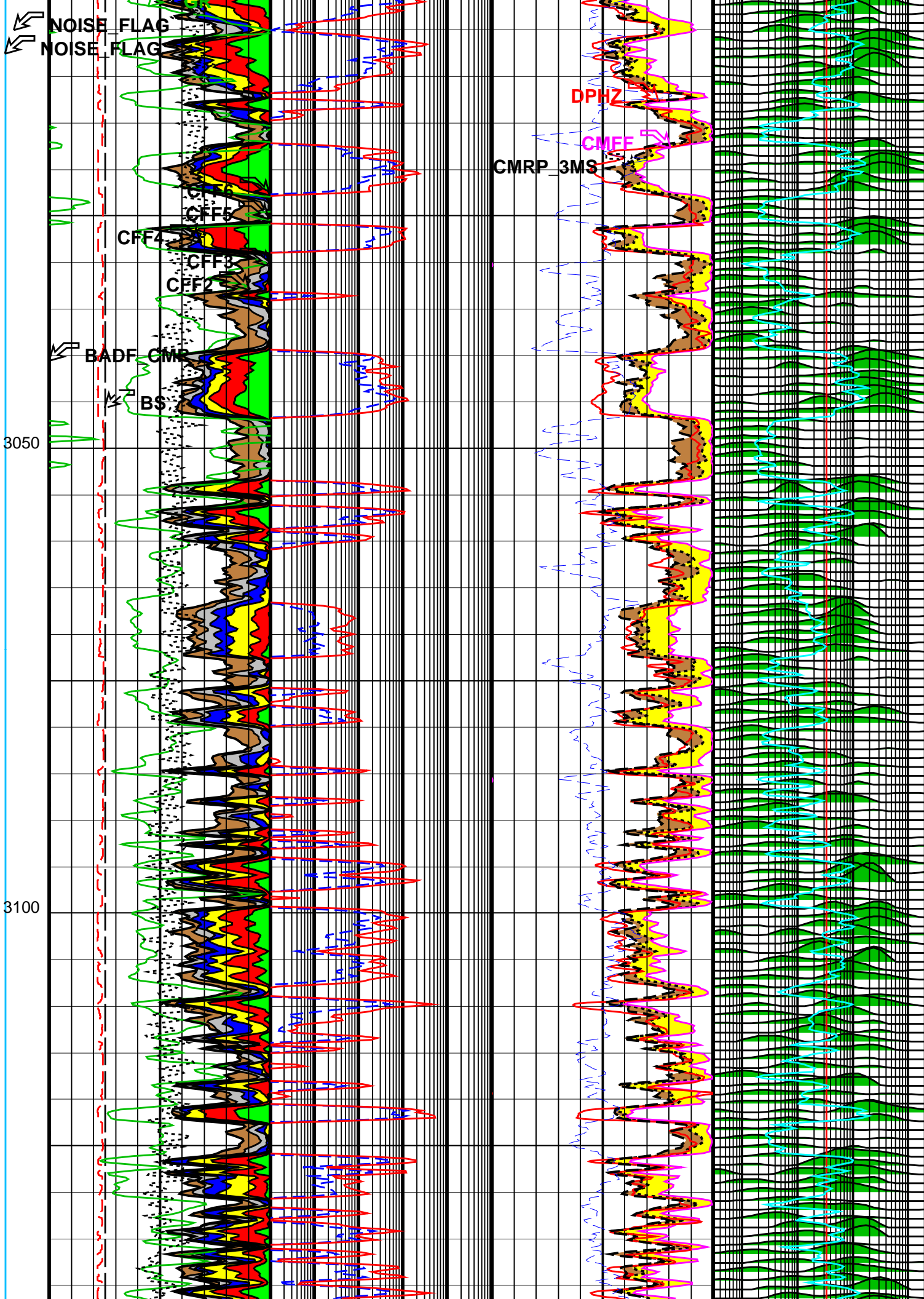


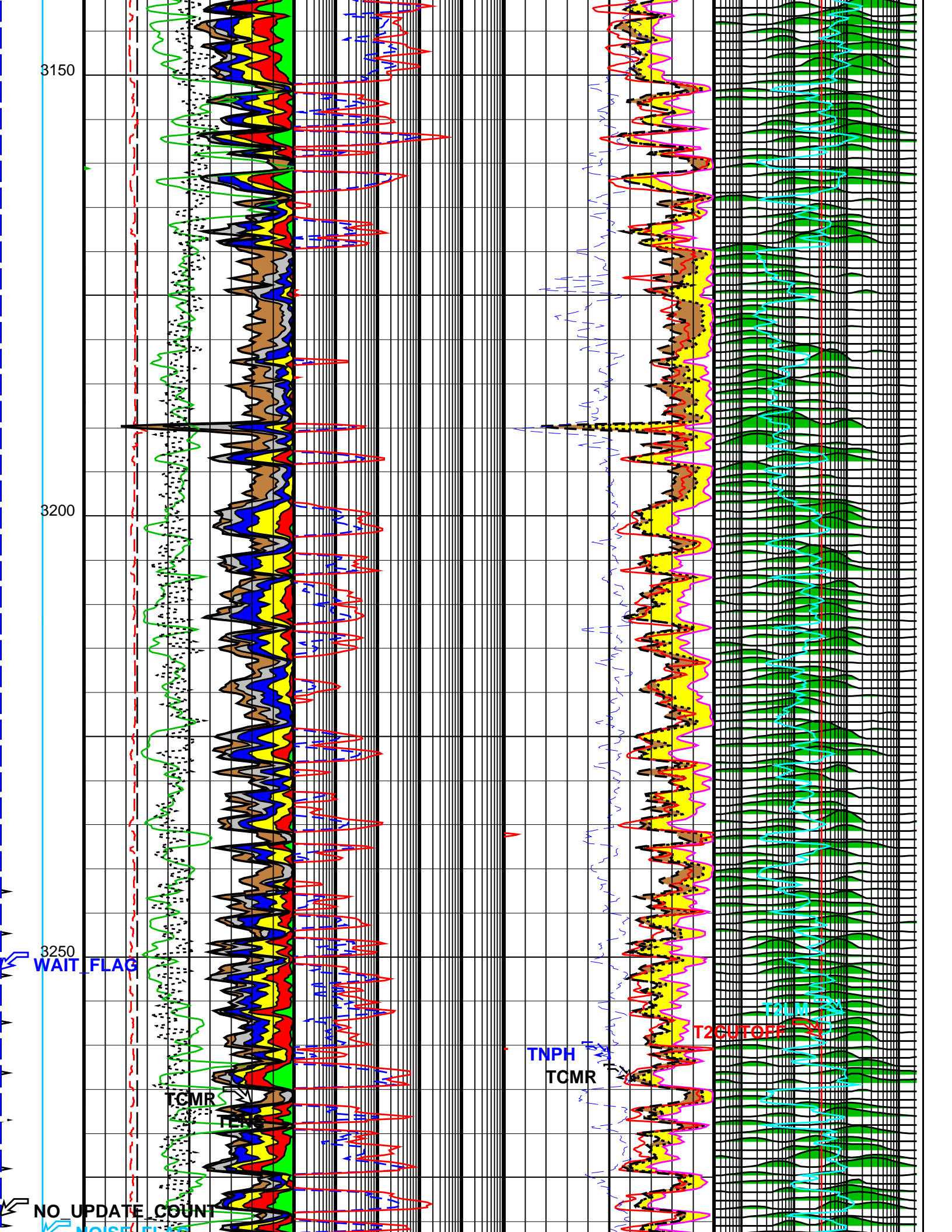


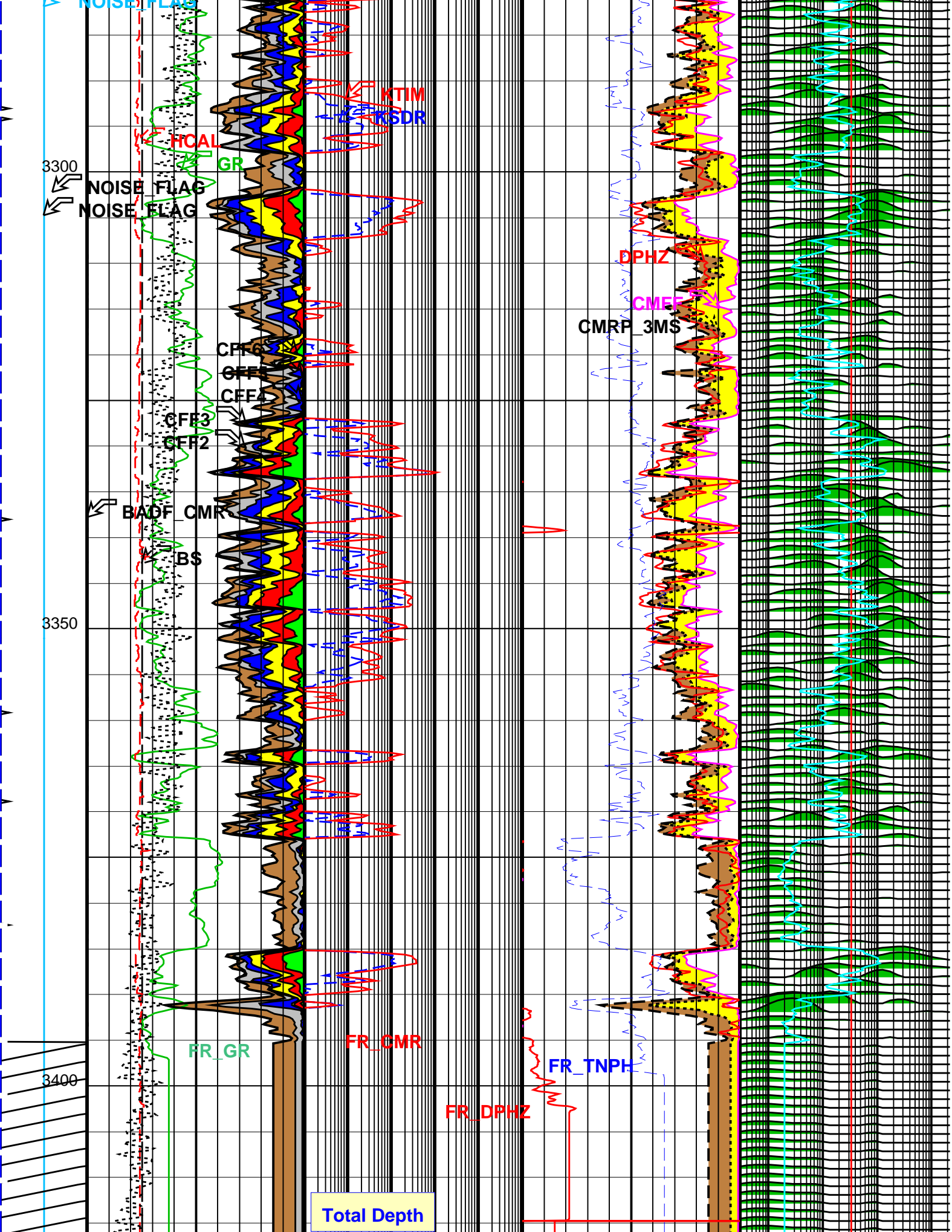












Flag	0	(IN)	0.1	(MD)	10000	0.4	(V/V)	0	0.3	(MS)	3000
Insuff. WT Flag	CMR Free Fluid Porosity for T2 Cutoff 2 (CFF2)		Timur/Coates Permeability (KTIM)		10000	CMR 3ms Porosity (CMRP_3MS)		0	T2 Logarithmic Mean (T2LM)		3000
	0.4	(V/V)	0	0.1	(MD)	0.4	(V/V)	0	0.3	(MS)	3000
Caution Moderate Noise	Gamma Ray (GR)				200	CMR Free Fluid Porosity (CMFF)		0	T2 Distribution (T2_DIST_MW)		89
	0	(GAPI)				0.4	(V/V)	0	60	(US)	
Noise Out of Tolerance	HILT Caliper (HCAL)				16	Std. Res. Density Porosity (DPHZ)		0			
	6	(IN)				0.4	(V/V)	0			
(NO_UPDATE_COUNT)	Tension (TENS)				0	Total CMR Porosity (TCMR)		0			
0 (----10)	1000	(LBF)				0.4	(V/V)	0			
	Bins 1-2					Capillary Bound Fluid Porosity					
	Bin 3					Small Pore Porosity					
	Bin 4										
	Bin 5										
	Bin 6										
	Bins 7-8										

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HRLT-B: High Resolution Laterolog Array – E			
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
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	YES	
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	
MDEN	Matrix Density	2.71	G/C3
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	NO	
CMRT-B: Combinable Magnetic Resonance Tool – B			
BHS	Borehole Status	OPEN	

GCSE	Generalized Caliper Selection	HCAL	0	DEG
GDEV	Average Angular Deviation of Borehole from Normal		0.018227	DC/M
GGRD	Geothermal Gradient		LIMESTONE	
MATR	Rock Matrix for Neutron Porosity Corrections		20	DEGC
SHT	Surface Hole Temperature			
	HOLEV: Integrated Hole/Cement Volume			
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
MATR	Rock Matrix for Neutron Porosity Corrections		LIMESTONE	
SHT	Surface Hole Temperature		20	DEGC
	STI: Stuck Tool Indicator			
TDL	Total Depth – Logger		3418.30	M
	System and Miscellaneous			
BS	Bit Size		8.500	IN
BSAL	Borehole Salinity		26300.00	PPM
CSIZ	Current Casing Size		9.625	IN
CWEI	Casing Weight		43.50	LB/F
DFD	Drilling Fluid Density		9.40	LB/G
DO	Depth Offset for Playback		0.0	M
MST	Mud Sample Temperature		24.60	DEGC
PP	Playback Processing		RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample		0.1738	OHMM

Format: CMRT_BIN_POR_DEPTH_LOG_500 Vertical Scale: 1:500 Graphics File Created: 02-Dec-2004 15:15

OP System Version: 12C0-301

MCM

SPE-A	12C0-301	HRLT-B	12C0-301
HILTH-FTB	12C0-301	CMRT-B	12C0-301
DTC-H	12C0-301		

Input DLIS Files

02-Dec-2004 12:10

Output DLIS Files

DEFAULT HRLA_TLD_MCFL_CNL_020PUP FN:19 PRODUCER 02-Dec-2004 15:14

Schlumberger

**Repeat Section
(1:500)**

MAXIS Field Log

Company: Origin Energy Resources Ltd.

Well: Trefoil-1

Input DLIS Files

02-Dec-2004 12:09

Output DLIS Files

DEFAULT HRLA_TLD_MCFL_CNL_027PUP FN:26 PRODUCER 02-Dec-2004 16:33 3010.1 M 2909.0 M

CMR DEPTH LOG REPORT

PARAMETER SUMMARY

Tool Type: CMR-Plus

Cart. Number: 87

Sonde Number: 92

Kit Number: 26

DHC Version : 15

DSP Version : 12

SP Version : 2062001

LFST Temp(degC) : 99.27

EPM T1/T2: Auto

DMRP: Off

(200 200)

T1=5s: (13.83 0.02)

(3000 30)

(1 10)

Auto

T1/T2: 2

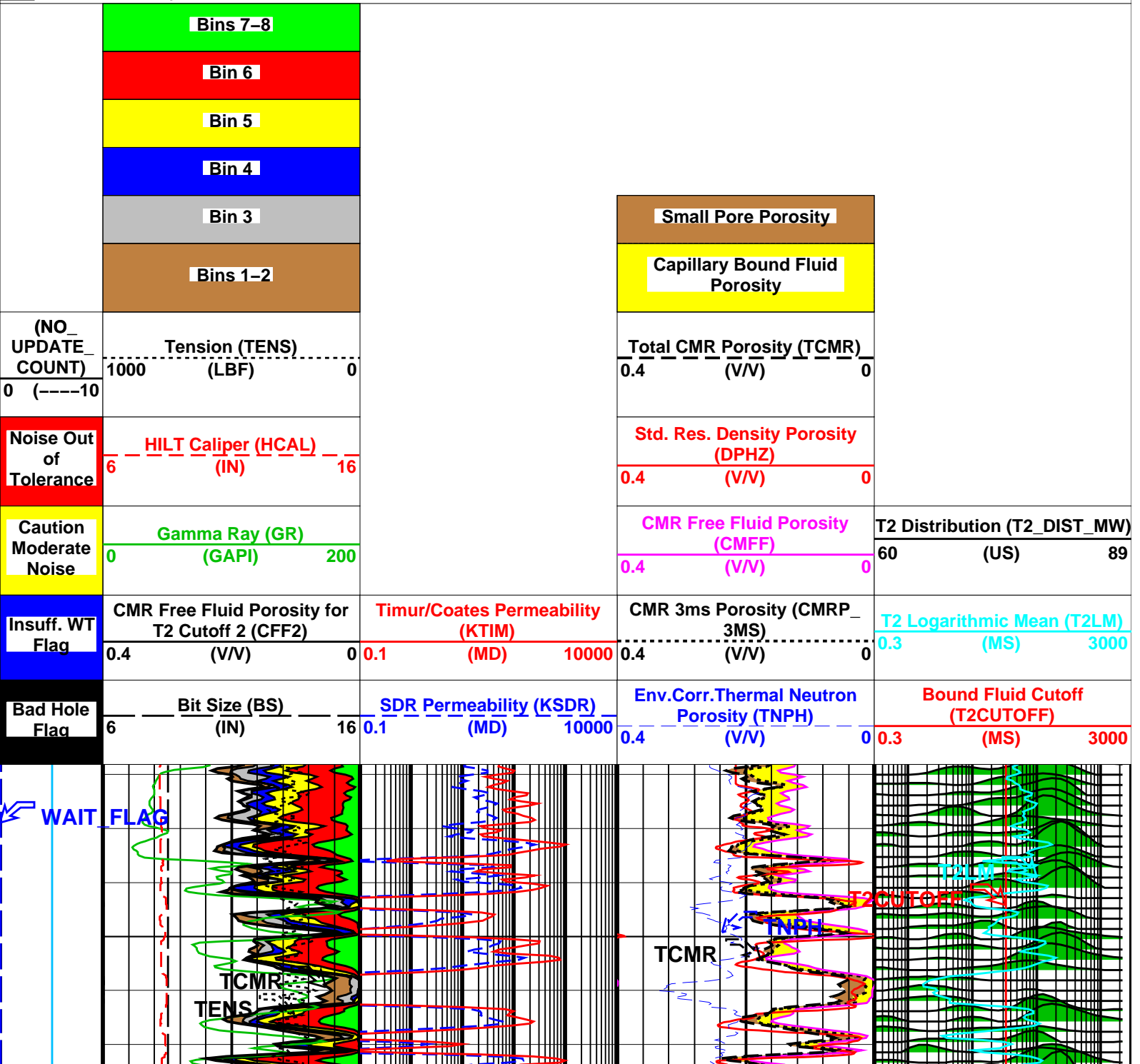
First Echo Used: No

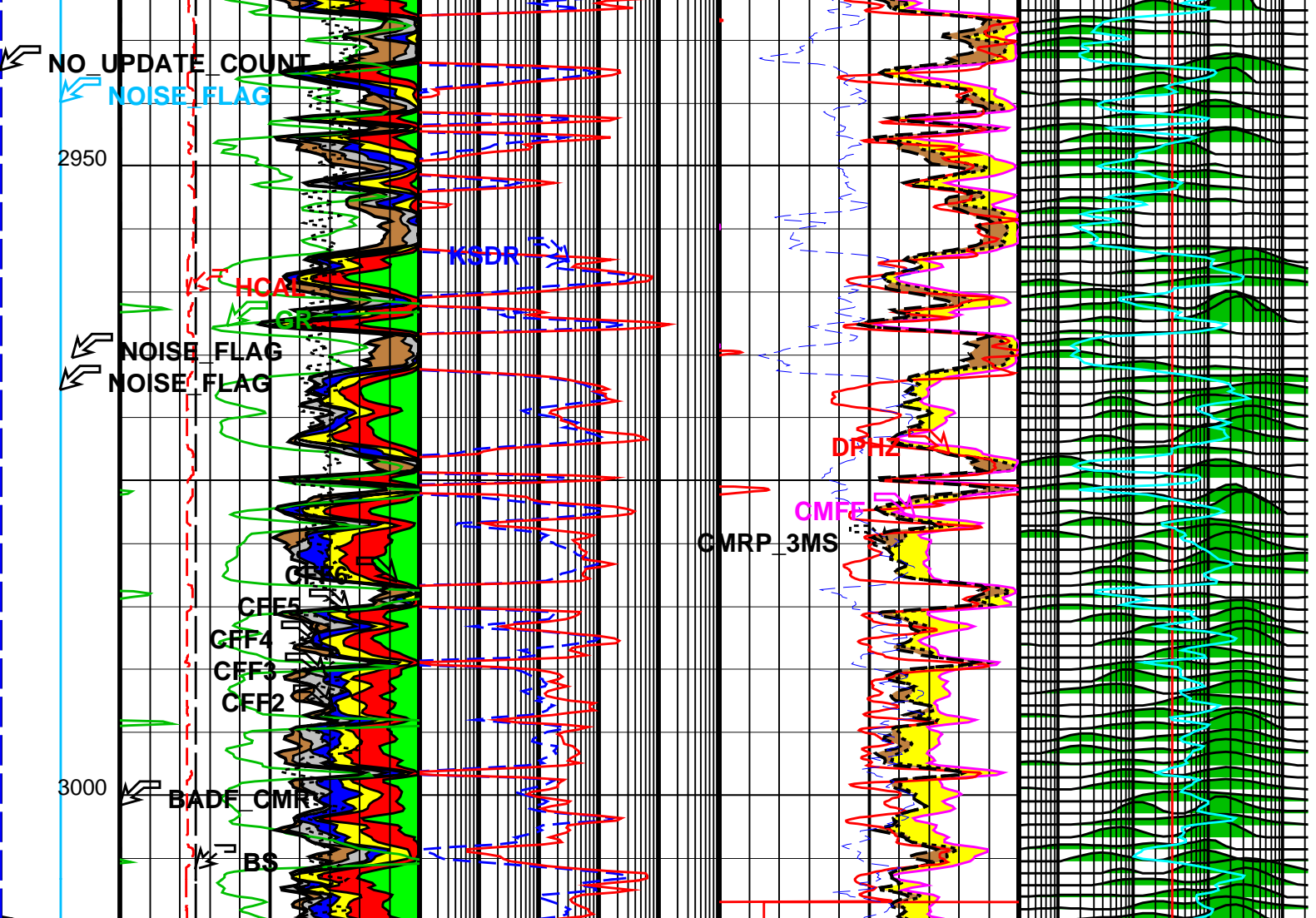
(0.3 1 3 10 33 100 300 1000 3000)

Req Log Speed (f/h): 600

PIP SUMMARY

Time Mark Every 60 S





Bad Hole Flag	Bit Size (BS) (IN)	SDR Permeability (KSDR) (MD)	Env.Corr.Thermal Neutron Porosity (TNPH) (V/V)	Bound Fluid Cutoff (T2CUTOFF) (MS)
Insuff. WT Flag	CMR Free Fluid Porosity for T2 Cutoff 2 (CFF2) (V/V)	Timur/Coates Permeability (KTIM) (MD)	CMR 3ms Porosity (CMRP_3MS) (V/V)	T2 Logarithmic Mean (T2LM) (MS)
Caution Moderate Noise	Gamma Ray (GR) (GAPI)		CMR Free Fluid Porosity (CMFF) (V/V)	T2 Distribution (T2_DIST_MW) (US)
Noise Out of Tolerance	HILT Caliper (HCAL) (IN)		Std. Res. Density Porosity (DPHZ) (V/V)	
(NO_UPDATE_COUNT)	Tension (TENS) (LBF)		Total CMR Porosity (TCMR) (V/V)	
	Bins 1-2		Capillary Bound Fluid Porosity	
	Bin 3		Small Pore Porosity	
	Bin 4			
	Bin 5			
	Bin 6			

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HRLT-B: High Resolution Laterolog Array – E			
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
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	YES	
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	
MDEN	Matrix Density	2.71	G/C3
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	NO	
CMRT-B: Combinable Magnetic Resonance Tool – 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
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
HOLEV: Integrated Hole/Cement Volume			
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
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
TDL	Total Depth – Logger	3418.30	M
System and Miscellaneous			
BS	Bit Size	8.500	IN
BSAL	Borehole Salinity	26300.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	43.50	LB/F
DFD	Drilling Fluid Density	9.40	LB/G
DO	Depth Offset for Playback	2.0	M
DORL	Depth Offset for Repeat Analysis	0.0	M
MST	Mud Sample Temperature	24.60	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.1738	OHMM

Format: CMRT_BIN_POR_DEPTH_LOG_500 Vertical Scale: 1:500

Graphics File Created: 02-Dec-2004 16:33

OP System Version: 12C0-301

MCM

SPE-A	12C0-301	HRLT-B	12C0-301
HILTH-FTB	12C0-301	CMRT-B	12C0-301
DTC-H	12C0-301		

Input DLIS Files

Output DLIS Files

DEFAULT

HRLA_TLD_MCFL_CNL_027PUP

FN:26

PRODUCER

02-Dec-2004 16:33

Schlumberger**Larmor Frequency Search
Records**

MAXIS Field Log

CMRT LARMOR FREQUENCY SEARCH REPORT – Wed Nov 24 13:23:22 2004**Search Results:**

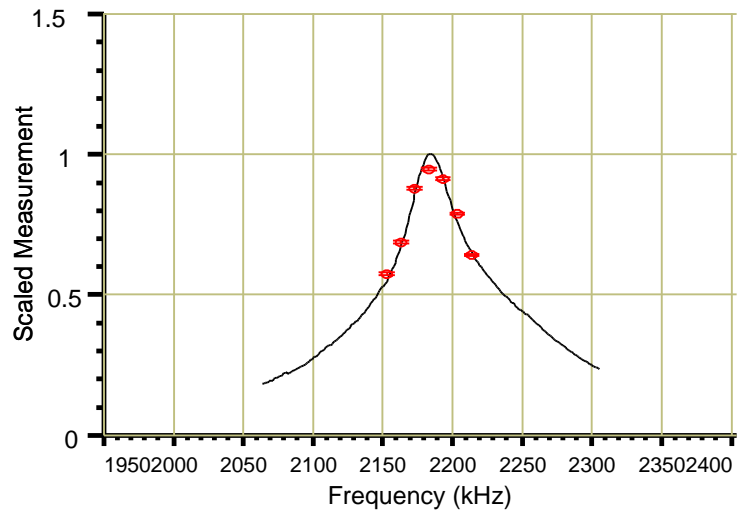
Larmor Frequency (kHz): **2182**
 Temperature (degc): **97.2**

Search Parameters:

Central Frequency (kHz): 2181
 Central Frequency Selection: Manual

Measured Data:

Frequency	Amplitude	RMS Noise	Std Deviation
2151	51.00	1.02	0.9846
2161	61.00	0.97	0.9843
2171	78.00	0.94	0.9851
2181	84.00	1.03	0.9771
2191	81.00	0.96	0.9823
2201	70.00	1.02	0.9853
2211	57.00	0.92	0.9818

**Related Data:**

Depth(m): 2673.9
 Average Cable Speed (ft/h): 0.0
 Delta Temperature (degc): 0.2
 Measurement Time (sec): 93.4
 HV Peak Current (mA): 4183.2
 Previous LFST Freq (at Temp): 2180
 Frequency Std Deviation (kHz): 0.28
 Number of Echoes: 300
 Polarization Time (sec): 0.400

Freq estimate from Temp: 2179
 Tune Word Offset: -1
 Sonde Number: 92
 Cartridge Number: 87

CMRT LARMOR FREQUENCY SEARCH REPORT – Wed Nov 24 13:21:17 2004**Search Results:**

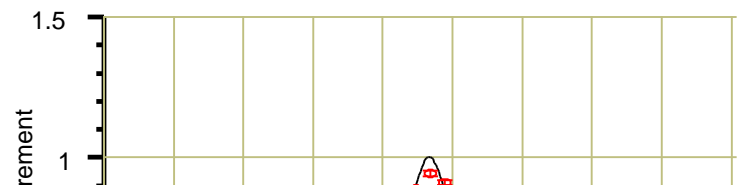
Larmor Frequency (kHz): **2181**
 Temperature (degc): **96.9**

Search Parameters:

Central Frequency (kHz): 2182
 Central Frequency Selection: Manual

Measured Data:

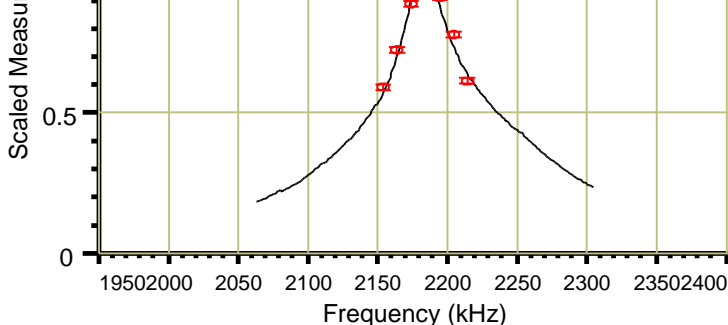
Frequency	Amplitude	RMS Noise	Std Deviation
2152	54.00	1.84	1.7852
2162	66.00	1.79	1.7858
2172	81.00	1.72	1.7804



2182	86.00	1.84	1.7713
2192	83.00	1.75	1.7875
2202	71.00	1.79	1.7894
2212	56.00	1.75	1.7796

Related Data:

Depth(m): 2673.9
Average Cable Speed (ft/h): 0.0
Delta Temperature (degc): 0.1
Measurement Time (sec): 44.7
HV Peak Current (mA): 4205.6
Previous LFST Freq (at Temp): 2181
Frequency Std Deviation (kHz): 0.53
Number of Echoes: 300
Polarization Time (sec): 0.400



Freq estimate from Temp: 2179
Tune Word Offset: -1
Sonde Number: 92
Cartridge Number: 87

CMRT LARMOR FREQUENCY SEARCH REPORT – Wed Nov 24 13:20:01 2004

Search Results:

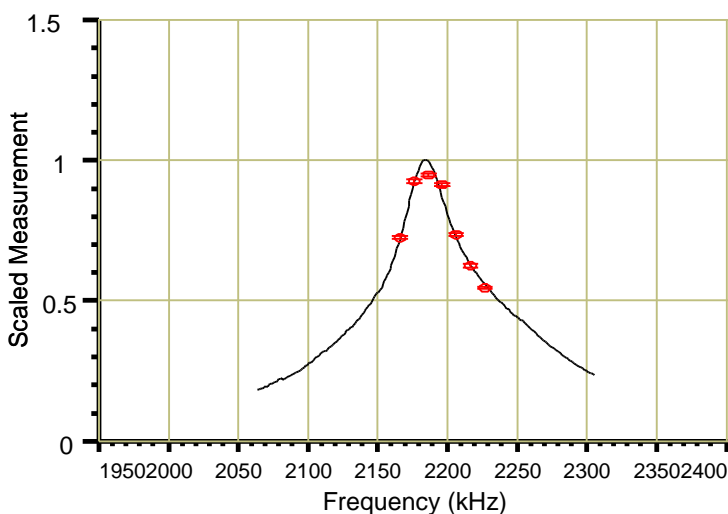
Larmor Frequency (kHz): **2182**
Temperature (degc): **96.7**

Search Parameters:

Central Frequency (kHz): 2194
Central Frequency Selection: Manual

Measured Data:

Frequency	Amplitude	RMS Noise	Std Deviation
2164	65.00	0.93	0.9668
2174	83.00	1.01	0.9667
2184	85.00	1.02	0.9609
2194	82.00	0.99	0.9711
2204	66.00	0.90	0.9671
2214	56.00	0.95	0.9661
2224	49.00	0.97	0.9654



Related Data:

Depth(m): 2673.9
Average Cable Speed (ft/h): 0.0
Delta Temperature (degc): 0.2
Measurement Time (sec): 87.3
HV Peak Current (mA): 4222.7
Previous LFST Freq (at Temp): 2193
Frequency Std Deviation (kHz): 0.32
Number of Echoes: 300
Polarization Time (sec): 0.400

Freq estimate from Temp: 2179
Tune Word Offset: -1
Sonde Number: 92
Cartridge Number: 87

CMRT TUNE WORD SEARCH REPORT – Wed Nov 24 13:17:26 2004

Search Results:

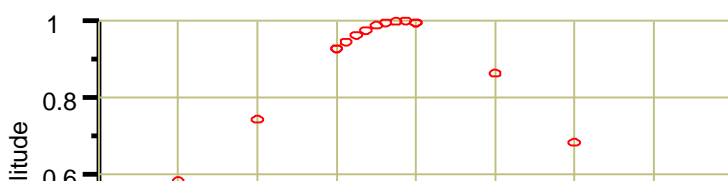
Tune Word: **91**
Tune Word Offset: **-1**
Maximum Amplitude: 1113.8
Temperature(deg): 96.2
Depth (m): 2673.9

Search Parameters:

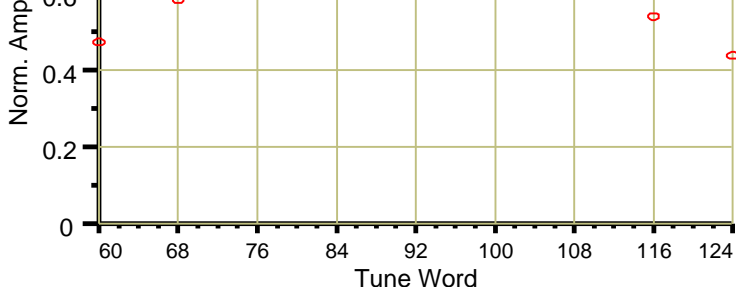
Search Frequency (kHz): 2194
Search Mode: Manual

Related Data:

Master Cal Test Loop Amp: 1685.2



Master Cal Test Loop Amp: 1685.3
Current LF Estimate (kHz): 2194
Sonde Number: 92
Cartridge Number: 87



CMRT TUNE WORD SEARCH REPORT – Wed Nov 24 13:15:49 2004

Search Results:

Tune Word: **90**
Tune Word Offset: **-2**

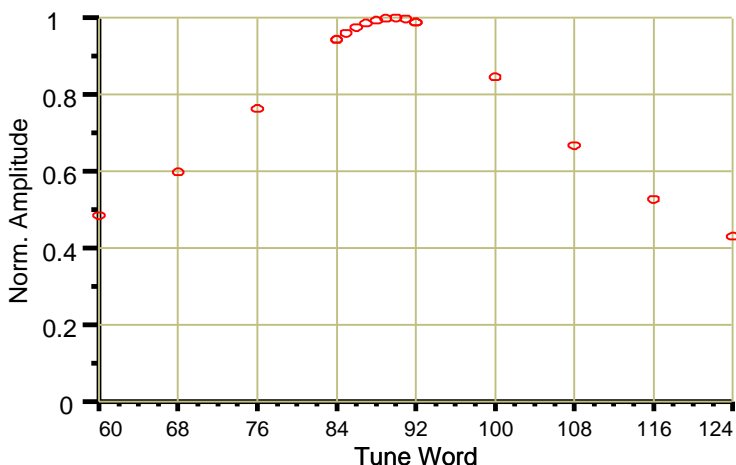
Maximum Amplitude: 1108.5
Temperature(degC): 95.8
Depth (m): 2673.9

Search Parameters:

Search Frequency (kHz): 2195
Search Mode: Manual

Related Data:

Master Cal Test Loop Amp: 1685.3
Current LF Estimate (kHz): 2194
Sonde Number: 92
Cartridge Number: 87



CMRT LARMOR FREQUENCY SEARCH REPORT – Wed Nov 24 20:23:37 2004

Search Results:

Larmor Frequency (kHz): **2180**
Temperature (degC): **99.3**

Search Parameters:

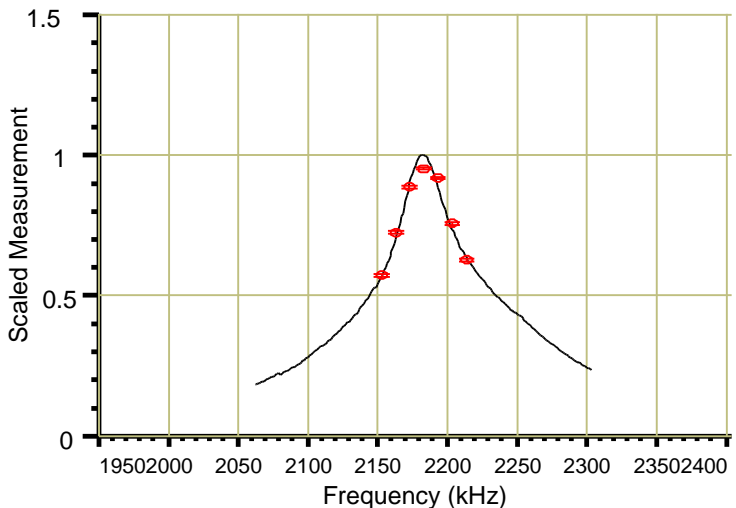
Central Frequency (kHz): 2181
Central Frequency Selection: Manual

Measured Data:

Frequency	Amplitude	RMS Noise	Std Deviation
2151	53.00	0.78	0.8009
2161	67.00	0.76	0.8023
2171	82.00	0.81	0.7997
2181	88.00	0.75	0.7965
2191	85.00	0.87	0.8038
2201	70.00	0.82	0.8023
2211	58.00	0.81	0.8002

Related Data:

Depth(m): 2674.0
Average Cable Speed (ft/h): 0.0
Delta Temperature (degC): 0.2
Measurement Time (sec): 135.5
HV Peak Current (mA): 4043.4
Previous LFST Freq (at Temp): 2180
Frequency Std Deviation (kHz): 0.24
Number of Echoes: 300
Polarization Time (sec): 0.400



Freq estimate from Temp: 2177
Tune Word Offset: -2
Sonde Number: 92
Cartridge Number: 87

CMRT LARMOR FREQUENCY SEARCH REPORT – Wed Nov 24 20:20:01 2004

Search Results:

Larmor Frequency (kHz): **2181**
Temperature (degc): **99.1**

Search Parameters:

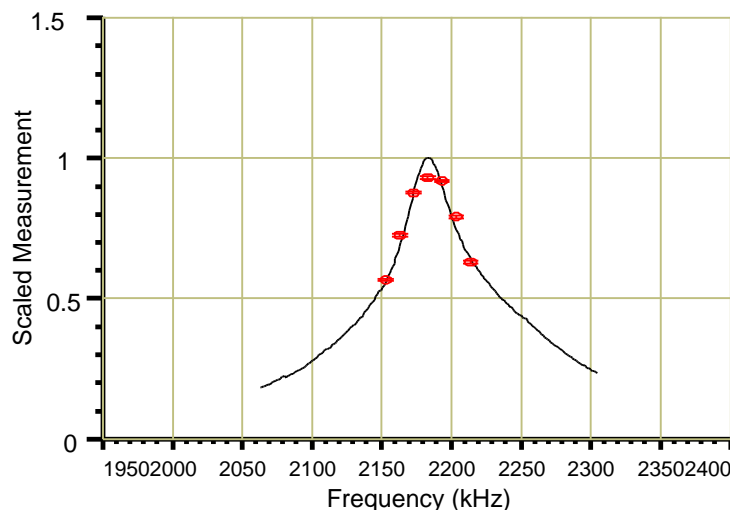
Central Frequency (kHz): 2181
Central Frequency Selection: Manual

Measured Data:

Frequency	Amplitude	RMS Noise	Std Deviation
2151	53.00	0.80	0.8292
2161	68.00	0.83	0.8317
2171	82.00	0.82	0.8287
2181	87.00	0.82	0.8224
2191	86.00	0.82	0.8305
2201	74.00	0.84	0.8323
2211	59.00	0.86	0.8279

Related Data:

Depth(m): 2674.0
Average Cable Speed (ft/h): 0.0
Delta Temperature (degc): 0.4
Measurement Time (sec): 118.3
HV Peak Current (mA): 4065.8
Previous LFST Freq (at Temp): 2180
Frequency Std Deviation (kHz): 0.25
Number of Echoes: 300
Polarization Time (sec): 0.400



Freq estimate from Temp: 2177
Tune Word Offset: -2
Sonde Number: 92
Cartridge Number: 87

CMRT TUNE WORD SEARCH REPORT – Wed Nov 24 20:16:00 2004

Search Results:

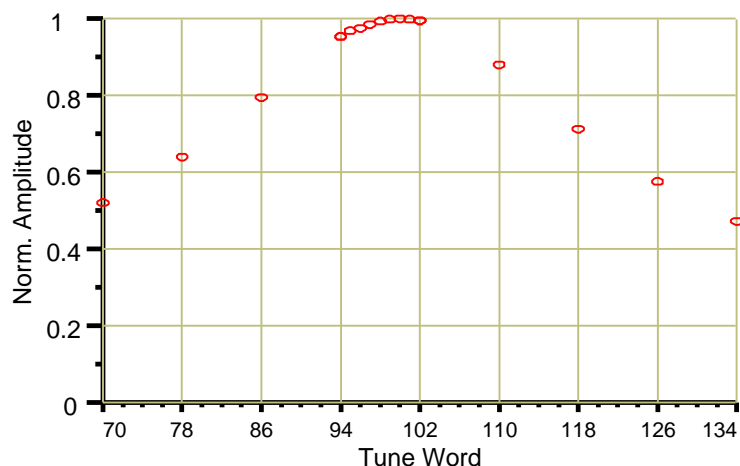
Tune Word: **100**
Tune Word Offset: **-2**
Maximum Amplitude: 1014.5
Temperature(deg): 98.4
Depth (m): 2674.0

Search Parameters:

Search Frequency (kHz): 2182
Search Mode: Manual

Related Data:

Master Cal Test Loop Amp: 1685.3
Current LF Estimate (kHz): 2181
Sonde Number: 92
Cartridge Number: 87



Company:

Well:

Output DLIS Files

DEFAULT CMR_071LTP FN:70 PRODUCER 21-Nov-2004 16:07 -54.3 M 1.5 M

CMR STATION LOG REPORT

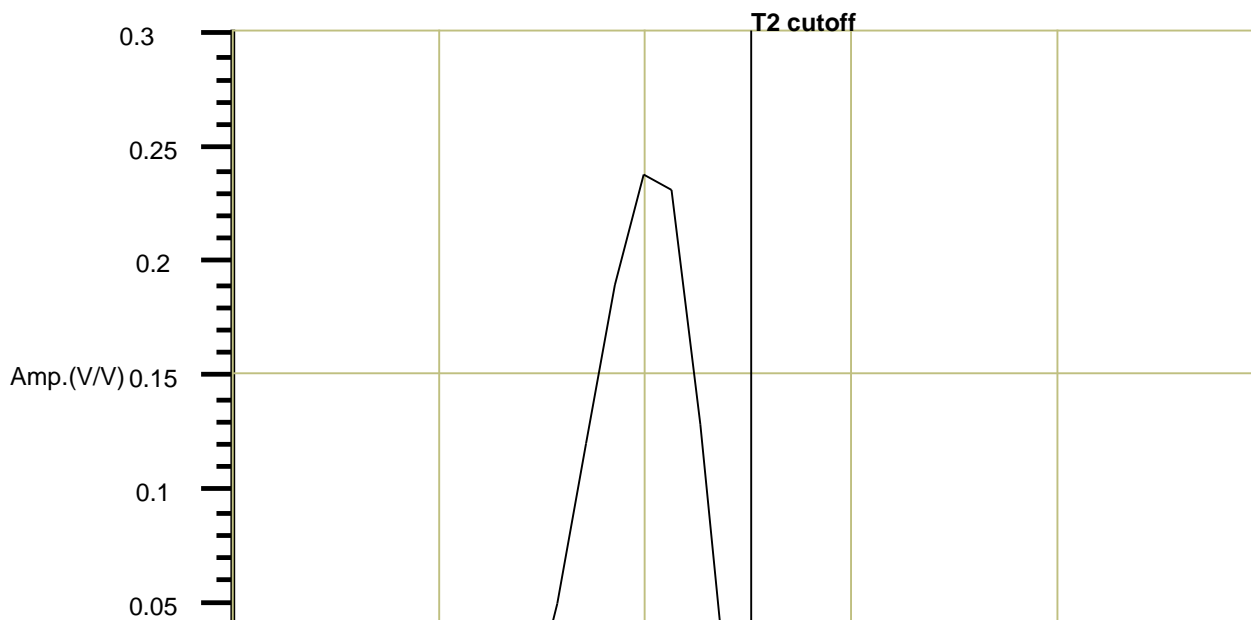
DEPTH(M): 0.000

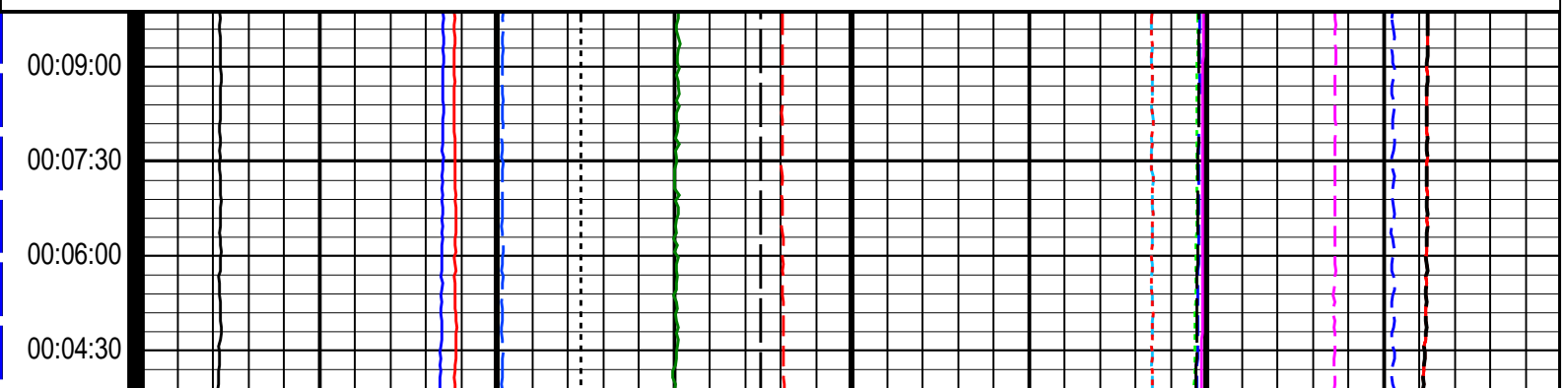
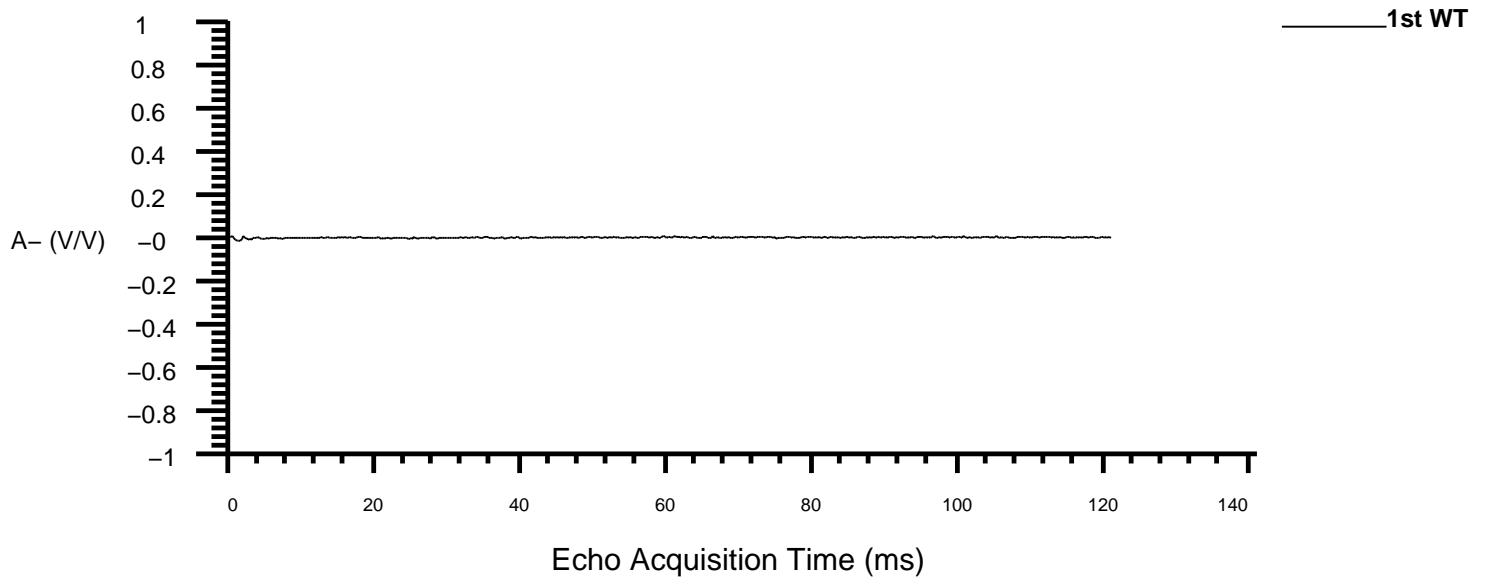
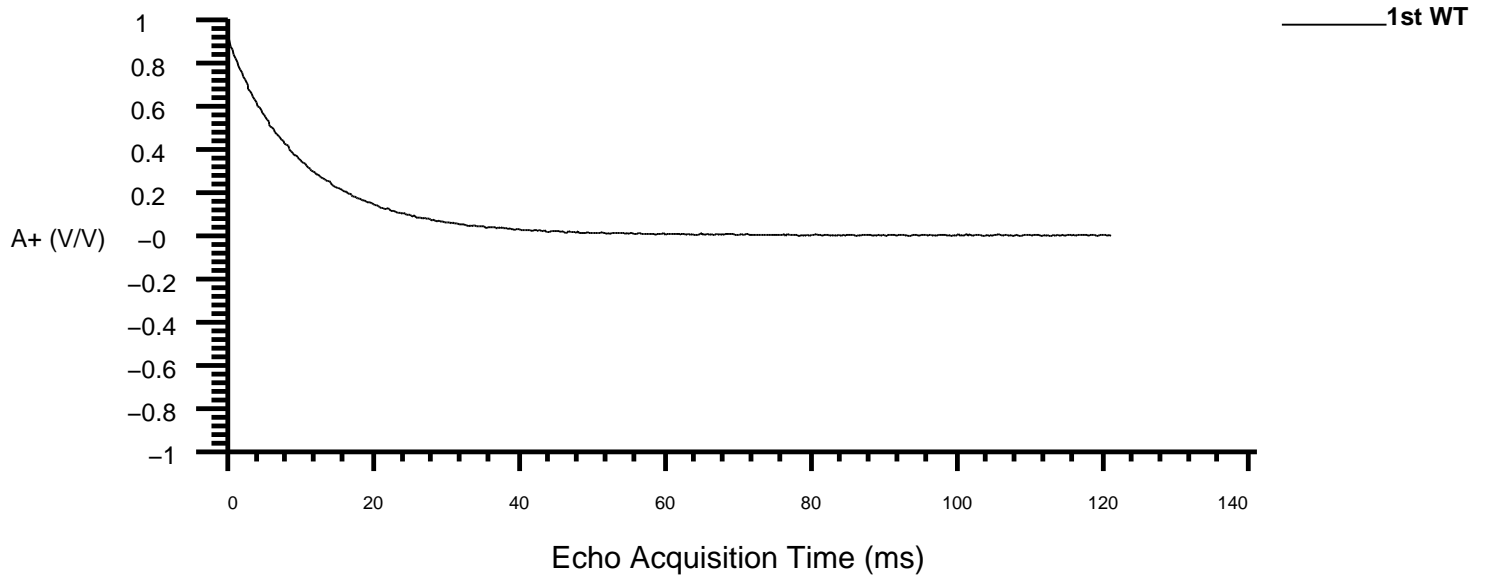
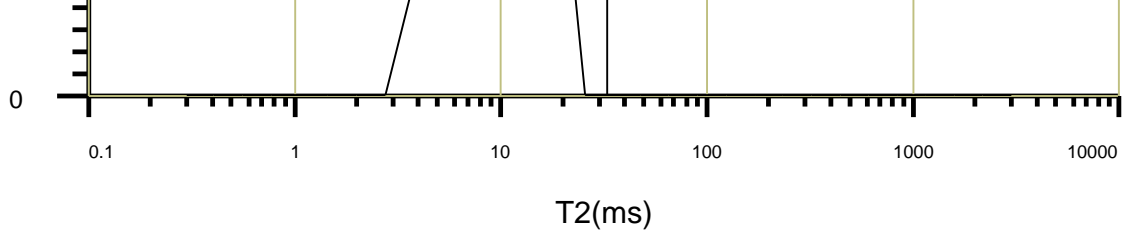
PARAMETER SUMMARY

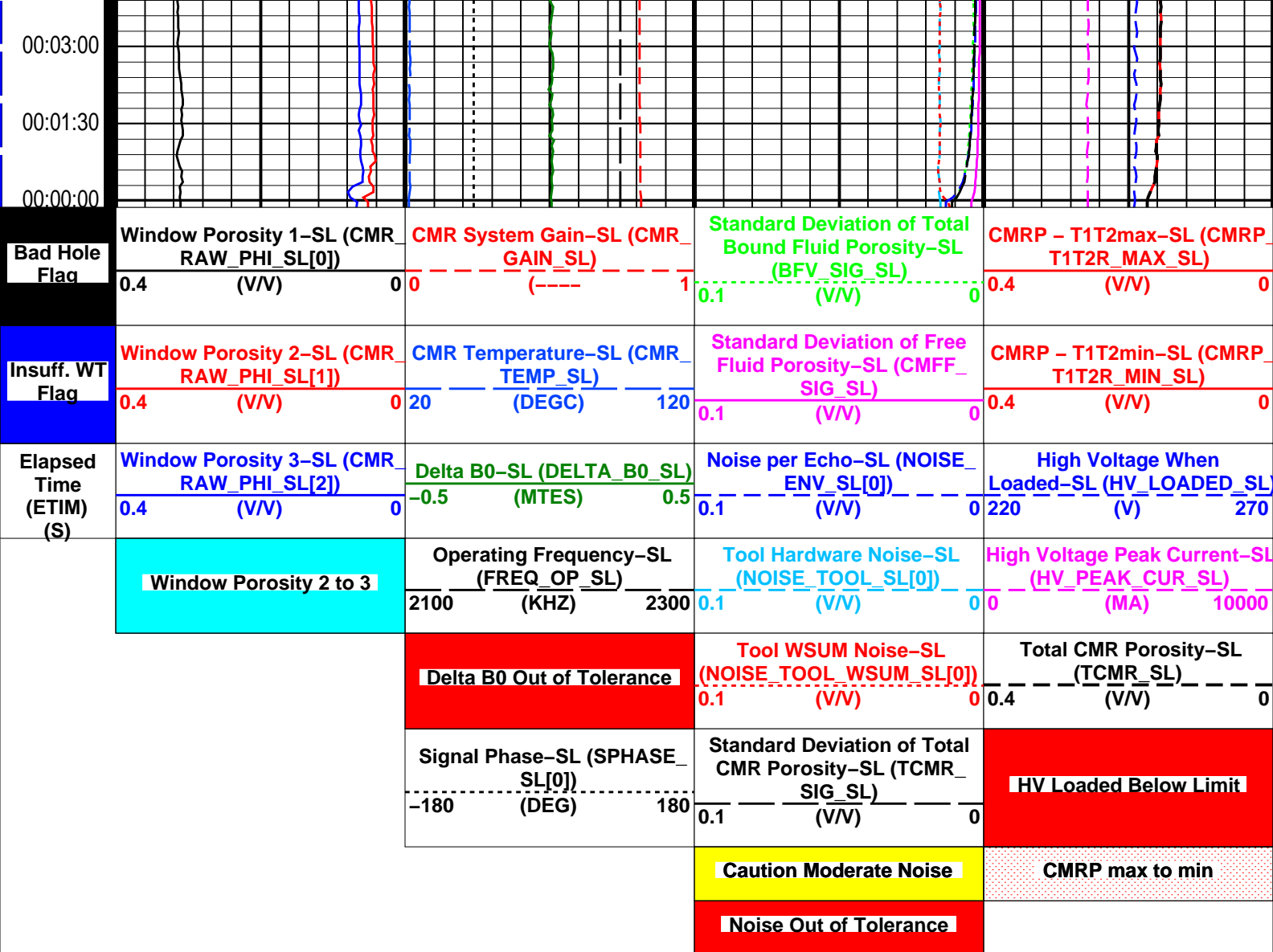
Tool Type: CMR-Plus	Cart. Number: 87	Sonde Number: 92	
Kit Number: 26	DHC Version : 15	DSP Version : 12	SP Version : 2062001
Mode: Mud Station Log		LFST Freq(khz) : 2249	LFST Temp(degc) : 20.39
Log Direction: Station	Polarization Correction: On	EPM: No	
Echo Spacing(us):	(200)		
Polarization Time(sec):	(2.4)		
Number of Echoes:	(1800)		
Repetition:	(1)		
Regularization:	Auto		
T2 Min(msec): 0.3	T2 Max(msec): 3000	T2 Cutoff(msec): 33	T1/T2: 1
Number of Components: 30	Downhole Stacking: 0	Uphole Stacking: 1	First Echo Used: No
Multiple T2 Cutoffs(msec):	(0.3 1 3 10 33 100 300 1000 3000)		
Update Int.(sec): 6			

MEASURED DATA

TCMR Porosity(V/V): 0.952	Log Mean T2(msec): 9.594		
Free Fluid (V/V): 0.000	SDR Perm.(md): 302.082	Tmr/Cts Perm.(md): 0.001	Temperature(degc): 21.501
Computed T1/T2: N/A			
Signal to Noise Ratio:	(444.362)		
Min. Freq.(kHz): 2248	Max. Freq.(kHz): 2248		







PIP SUMMARY

Time Mark Every 60 S

Format: CMRT_LQC_STATION_LOG

Vertical Scale: 1" per 180S

Graphics File Created: 21-Nov-2004 16:07

OP System Version: 12C0-301

MCM

CMRT-B 12C0-301 DTC-H 12C0-301

Output DLIS Files

DEFAULT CMR_071LTP FN:70 PRODUCER 21-Nov-2004 16:07

Schlumberger

Mud Filtrate Measurement

MAXIS Field Log

Company:

Well:

Output DLIS Files

CMR STATION LOG REPORT

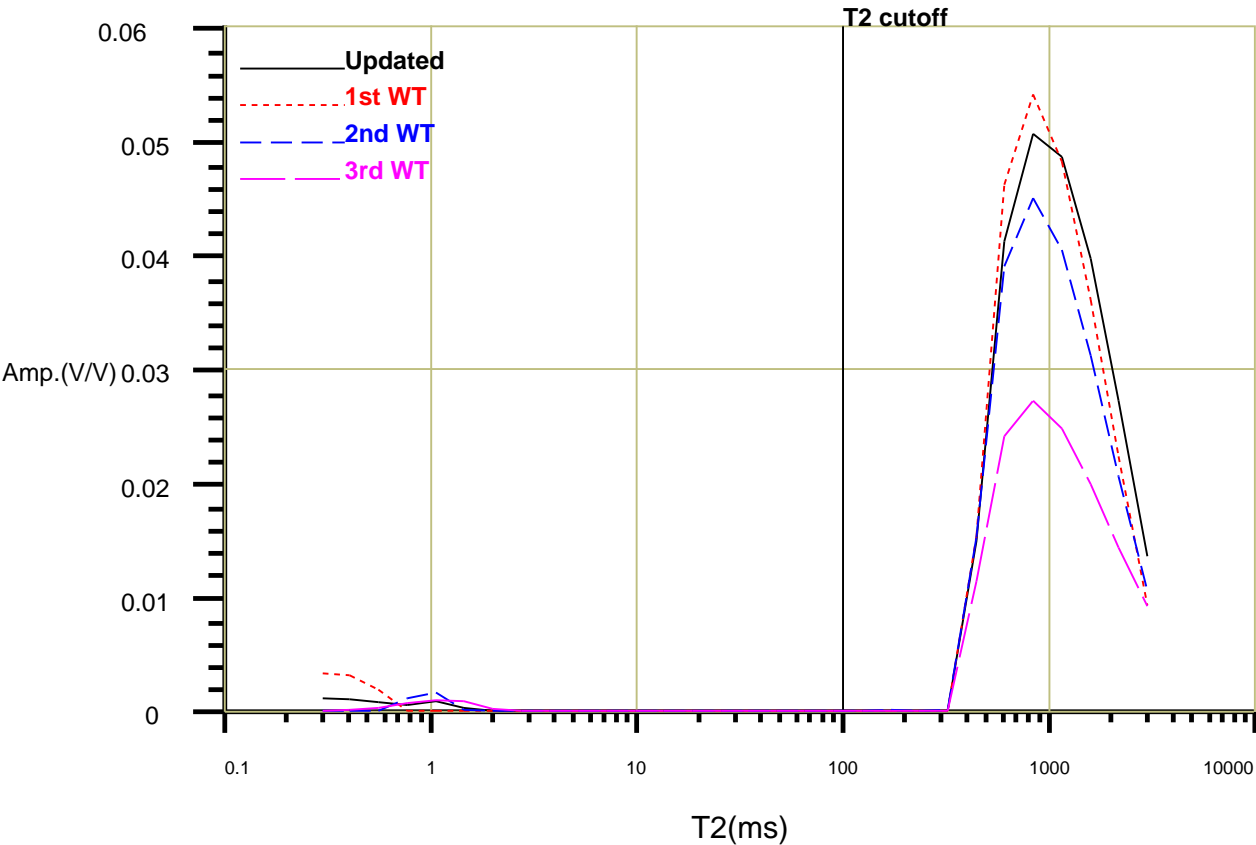
DEPTH(M): 0.000

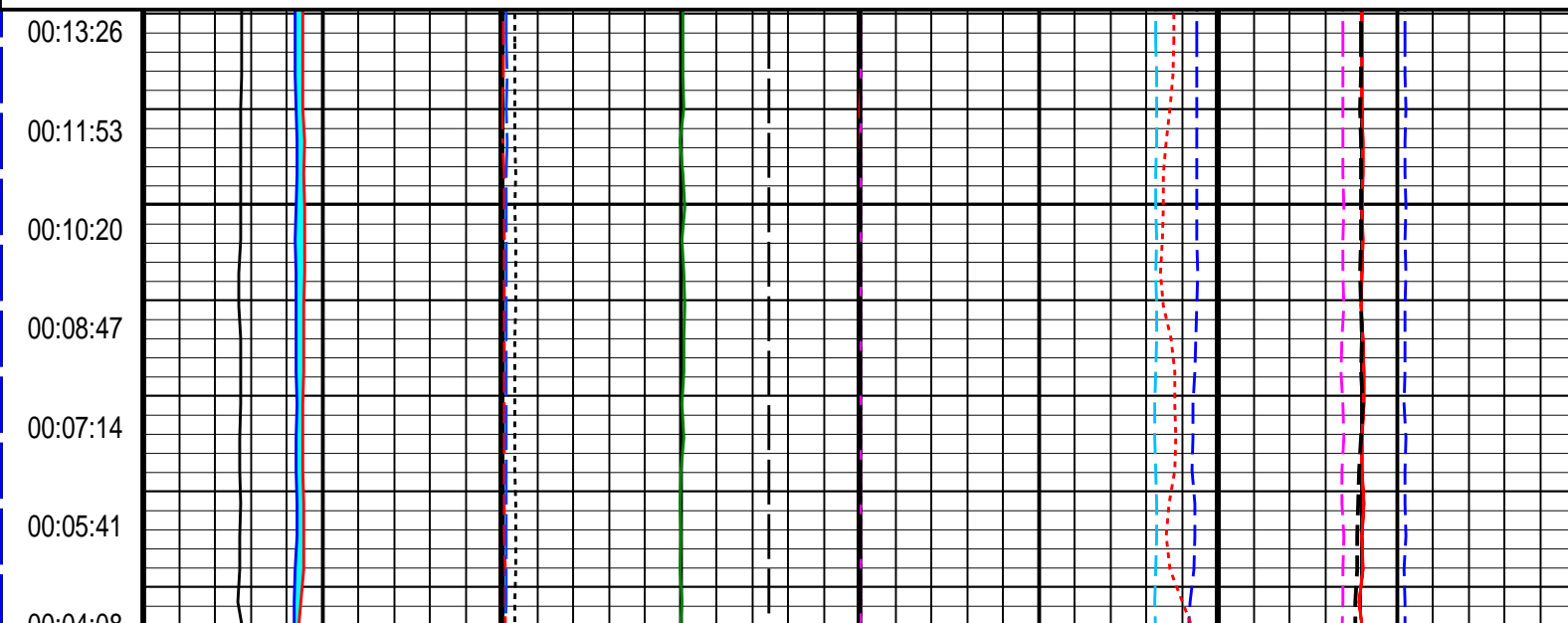
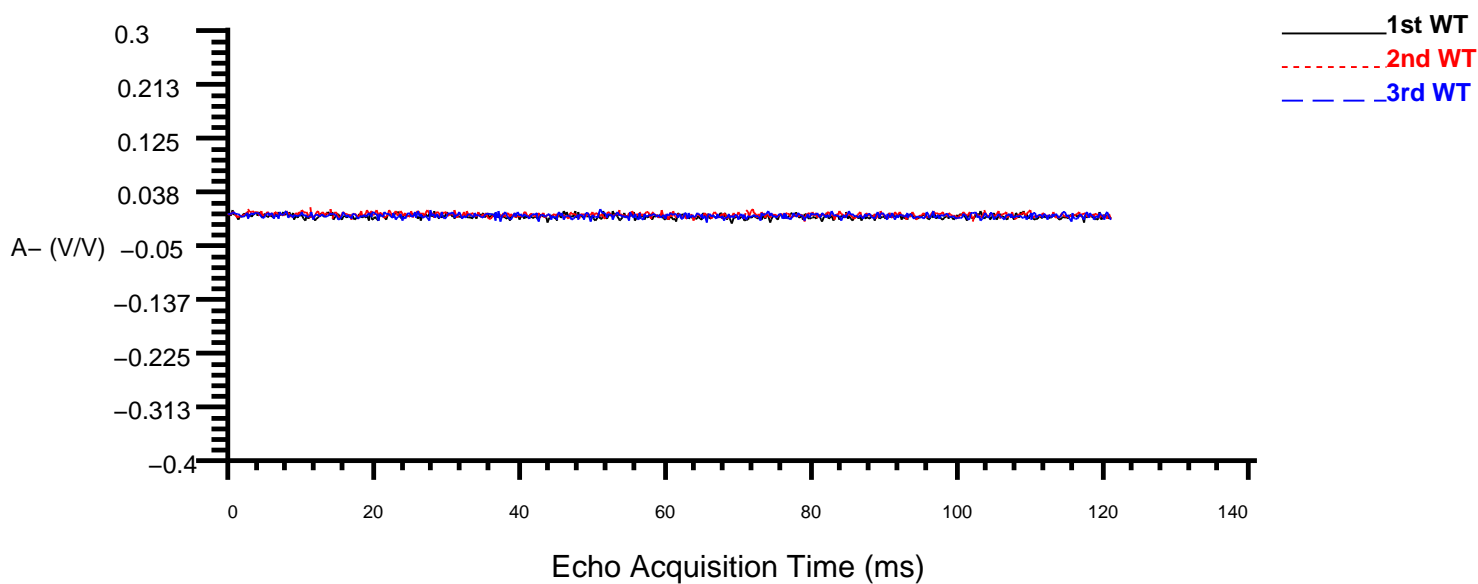
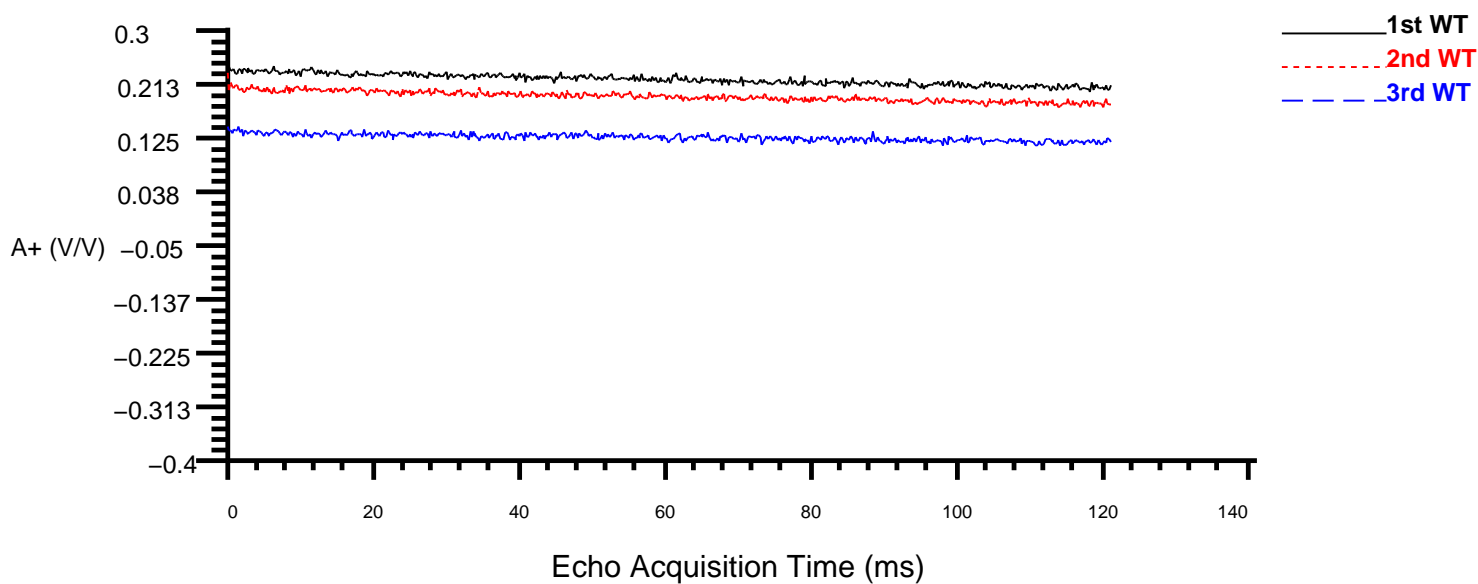
PARAMETER SUMMARY

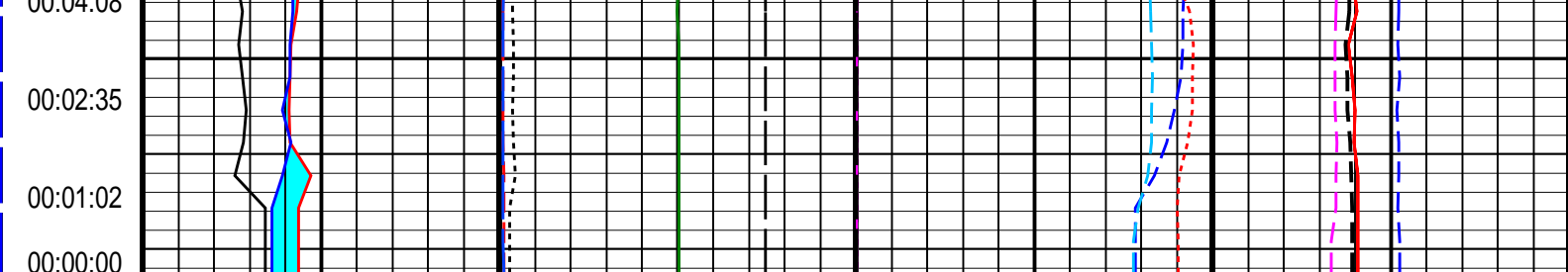
Tool Type: CMR-Plus	Cart. Number: 87	Sonde Number: 92	
Kit Number: 26	DHC Version : 15	DSP Version : 12	SP Version : 2062001
Mode: Free Fluid T1 Estimation Station Log		LFST Freq(khz) : 2249	LFST Temp(degc) : 20.39
Log Direction: Station	Polarization Correction: Off	EPM: No	
Echo Spacing(us):	(200 200 200)		
Polarization Time(sec):	(10 2.5 1)		
Number of Echoes:	(3000 3000 3000)		
Repetition:	(1 1 1)		
Regularization:	Auto		
T2 Min(msec): 0.3	T2 Max(msec): 3000	T2 Cutoff(msec): 100	T1/T2: 2
Number of Components: 30	Downhole Stacking: 0	Uphole Stacking: 1	First Echo Used: No
Multiple T2 Cutoffs(msec):	(0.3 1 3 10 33 100 300 1000 3000)		
Update Int.(sec): 31			

MEASURED DATA

TCMR_MW Porosity(V/V):	(0.240 0.205 0.134 0.241)		
Free Fluid (V/V):	(0.231 0.202 0.131 0.236)	Log Mean T2(msec): 936.259	T1 of CMFF (sec): 1.204
Computed T1/T2: 1.270	SDR Perm.(md): 11775.760	Tmr/Cts Perm.(md): 4668.969	Temperature(degc): 21.254
Signal to Noise Ratio:	(38.584 41.372 26.110)		
Min. Freq.(kHz): 2249	Max. Freq.(kHz): 2249		







Bad Hole Flag	Window Porosity 1-SL (CMR_RAW_PHI_SL[0]) 0.4 (V/V) 0	CMR System Gain-SL (CMR_GAIN_SL) 0 (----) 1	Standard Deviation of Total Bound Fluid Porosity-SL (BFV_SIG_SL) 0.1 (V/V) 0	CMRP - T1T2max-SL (CMRP_T1T2R_MAX_SL) 0.4 (V/V) 0
Insuff. WT Flag	Window Porosity 2-SL (CMR_RAW_PHI_SL[1]) 0.4 (V/V) 0	CMR Temperature-SL (CMR_TEMP_SL) 20 (DEGC) 120	Standard Deviation of Free Fluid Porosity-SL (CMFF_SIG_SL) 0.1 (V/V) 0	CMRP - T1T2min-SL (CMRP_T1T2R_MIN_SL) 0.4 (V/V) 0
Elapsed Time (ETIM) (S)	Window Porosity 3-SL (CMR_RAW_PHI_SL[2]) 0.4 (V/V) 0	Delta B0-SL (DELTA_B0_SL) -0.5 (MTES) 0.5	Noise per Echo-SL (NOISE_ENV_SL[0]) 0.1 (V/V) 0	High Voltage When Loaded-SL (HV_LOADED_SL) 220 (V) 270
	Window Porosity 2 to 3	Operating Frequency-SL (FREQ_OP_SL) 2100 (KHZ) 2300	Tool Hardware Noise-SL (NOISE_TOOL_SL[0]) 0.1 (V/V) 0	High Voltage Peak Current-SL (HV_PEAK_CUR_SL) 0 (MA) 10000
		Delta B0 Out of Tolerance	Tool WSUM Noise-SL (NOISE_TOOL_WSUM_SL[0]) 0.1 (V/V) 0	Total CMR Porosity-SL (TCMR_SL) 0.4 (V/V) 0
		Signal Phase-SL (SPHASE_SL[0]) -180 (DEG) 180	Standard Deviation of Total CMR Porosity-SL (TCMR_SIG_SL) 0.1 (V/V) 0	HV Loaded Below Limit
			Caution Moderate Noise	CMRP max to min
			Noise Out of Tolerance	

PIP SUMMARY

Time Mark Every 60 S

Format: CMRT_LQC_STATION_LOG

Vertical Scale: 1" per 180S

Graphics File Created: 21-Nov-2004 15:48

OP System Version: 12C0-301

MCM

CMRT-B 12C0-301 DTC-H 12C0-301

Output DLIS Files

DEFAULT CMR_070LTP FN:69 PRODUCER 21-Nov-2004 15:48

Schlumberger

Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M01							
Before: 24–Nov–2004 13:13							
HRLT M0–M1 Voltage Plus – 0	0	N/A	–318.7	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 1	0	N/A	–328.4	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 2	0	N/A	–329.7	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 3	0	N/A	–327.3	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 4	0	N/A	–319.2	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 5	0	N/A	–322.8	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 6	0	N/A	331.1	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: 24–Nov–2004 13:13							
HRLT M1–M2 Voltage Plus – 0	0	N/A	1751	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 1	0	N/A	1809	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 2	0	N/A	1809	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 3	0	N/A	1795	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 4	0	N/A	1750	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 5	0	N/A	1771	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 6	0	N/A	–1833	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: 24–Nov–2004 13:13							
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	1804	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 2	0	N/A	1807	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 3	0	N/A	1797	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 4	0	N/A	1747	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 5	0	N/A	1769	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 6	0	N/A	–1816	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: 24–Nov–2004 13:13							
HRLT A3–A4 Voltage Plus – 0	0	N/A	68600	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 1	0	N/A	70910	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 2	0	N/A	71350	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 3	0	N/A	71220	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 4	0	N/A	69230	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 5	0	N/A	70130	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 6	0	N/A	–70340	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: 24–Nov–2004 13:13							
HRLT A4–A5 Voltage Plus – 0	0	N/A	68710	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 1	0	N/A	71110	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 2	0	N/A	71500	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 3	0	N/A	71390	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 4	0	N/A	69350	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 5	0	N/A	70240	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 6	0	N/A	–70530	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: 24–Nov–2004 13:13							
HRLT A5–A6 Voltage Plus – 0	0	N/A	68840	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 1	0	N/A	71190	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 2	0	N/A	71600	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 3	0	N/A	71500	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 4	0	N/A	69480	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 5	0	N/A	70380	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 6	0	N/A	–70600	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: 24–Nov–2004 13:13							
HRLT Torpedo–M0 Voltage – 0	0	N/A	–68200	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 1	0	N/A	–71260	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 2	0	N/A	–71620	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 3	0	N/A	–71470	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 4	0	N/A	–69350	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 5	0	N/A	–70200	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 6	0	N/A	70650	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: 24–Nov–2004 13:13							
HRLT Bridle#9–M0 Voltage – 0	0	N/A	–68200	N/A	N/A	2100	UV
HRLT Bridle#9–M0 Voltage – 1	0	N/A	–71210	N/A	N/A	2100	UV
HRLT Bridle#9–M0 Voltage – 2	0	N/A	–71570	N/A	N/A	2100	UV
HRLT Bridle#9–M0 Voltage – 3	0	N/A	–71440	N/A	N/A	2100	UV
HRLT Bridle#9–M0 Voltage – 4	0	N/A	–69330	N/A	N/A	2100	UV
HRLT Bridle#9–M0 Voltage – 5	0	N/A	–70190	N/A	N/A	2100	UV
HRLT Bridle#9–M0 Voltage – 6	0	N/A	70600	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: 24–Nov–2004 13:13							
HRLT Source Current Plus – 0	0	N/A	284.4	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: 24–Nov–2004 13:13							
HRLT Vertical Voltage PI – 0	0	N/A	–320.8	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI – 1	0	N/A	–324.5	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI – 2	0	N/A	–324.3	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI – 3	0	N/A	–319.7	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI – 4	0	N/A	–308.6	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI – 5	0	N/A	–327.0	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI – 6	0	N/A	340.7	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI – 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: 22–Nov–2004 17:28							
BS Window Ratio	0.7324	N/A	0.7368	N/A	N/A	N/A	
BS Window Sum	27590	N/A	27610	N/A	N/A	N/A	CPS
SS Window Ratio	0.4840	N/A	0.4865	N/A	N/A	N/A	
SS Window Sum	12010	N/A	11930	N/A	N/A	N/A	CPS
LS Window Ratio	0.2932	N/A	0.2995	N/A	N/A	N/A	
LS Window Sum	1398	N/A	1385	N/A	N/A	N/A	CPS

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

Before: 22–Nov–2004 17:28							
BS PM High Voltage (Command)	1347	N/A	1296	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1422	N/A	1424	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1328	N/A	1320	N/A	N/A	N/A	V

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration

Before: 22–Nov–2004 17:28							
BS Crystal Resolution	11.70	N/A	11.22	N/A	N/A	N/A	%
SS Crystal Resolution	9.918	N/A	10.37	N/A	N/A	N/A	%
LS Crystal Resolution	8.926	N/A	8.872	N/A	N/A	N/A	%

High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration

Before: 22–Nov–2004 17:45							
Raw B0 Resistivity	3875	N/A	3882	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3828	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3827	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration

Before: 22–Nov–2004 17:45							
HILT Caliper Zero Measurement	8.000	N/A	7.870	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	11.87	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration

Before: 22–Nov–2004 17:22							
Gamma Ray Background	30.00	N/A	4.018	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	178.4	N/A	178.4	N/A	N/A	16.22	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement

Master: 15–Nov–2004 23:24 Before: 22–Nov–2004 17:24							
CNTC Background	25.96	25.96	26.73	N/A	N/A	3.894	CPS
CFTC Background	27.87	27.87	25.37	N/A	N/A	4.181	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration

Before: 24–Nov–2004 11:42							
Z–Axis Acceleration	9.810	N/A	9.775	N/A	N/A	N/A	M/S2

High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results

Master: 15–Nov–2004 21:30							
Rho Aluminum	2.596	2.603	--	--	--	--	G/C3
Rho Magnesium	1.686	1.684	--	--	--	--	G/C3
Pe Aluminum	2.570	2.558	--	--	--	--	
Pe Magnesium	2.650	2.630	--	--	--	--	

High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary							
Master: 15–Nov–2004 21:30							
BS Average Deviation	0	0.5370	--	--	--	--	%
BS Max Deviation	0	1.364	--	--	--	--	%
SS Average Deviation	0	0.4926	--	--	--	--	%
SS Max Deviation	0	1.007	--	--	--	--	%
LS Average Deviation	0	0.8351	--	--	--	--	%
LS Max Deviation	0	1.655	--	--	--	--	%

Combinable Magnetic Resonance Tool – B Master Calibration – Calibration Fixture Measurement							
Master: 24–Nov–2004 12:52							
Tool Temperature MCAL	27.00	25.23	--	--	--	--	DEGC
LOOP Measurement MCAL	2300	1685	--	--	--	--	
Hall Probe B0 MCAL	52.00	52.67	--	--	--	--	MTES
Cal. Fixture Amplitude MCAL	37.50	28.84	--	--	--	--	

The GLS–VJ source activity is acceptable.









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






NCT–B Water Temperature 15.6 DEGC.




Thermal Housing Size 3.378 IN.

High Resolution Laterolog Array – B / Equipment Identification









Primary Equipment:				
HRLT Sonde		HRLS – B	782	
Auxiliary Equipment:				
HRLT lower Housing		HR LH – B	705	
HRLT Lower Cartridge		HR LC – B	705	
HRLT upper Housing		HRUH – B	705	
HRLT Upper Cartridge		HRUC – B	705	

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M01						
Idx	Phase	HRLT M0–M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		–318.7	–322.7	–274.3	–371.1
1	Before		–328.4	–322.7	–274.3	–371.1
2	Before		–329.7	–322.7	–274.3	–371.1
3	Before		–327.3	–322.7	–274.3	–371.1
4	Before		–319.2	–322.7	–274.3	–371.1
5	Before		–322.8	–322.7	–274.3	–371.1
6	Before		331.1	322.7	371.1	274.3
7	Before		–322.7	–322.7	–274.3	–371.1
(Minimum) (Nominal) (Maximum)						
Before: 24–Nov–2004 13:13						









High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M12						
Idx	Phase	HRLT M1–M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1751	1781	2048	1514
1	Before		1809	1781	2048	1514
2	Before		1809	1781	2048	1514
3	Before		1795	1781	2048	1514
4	Before		1750	1781	2048	1514

5	Before		1771	1781	2048	1514
6	Before		-1833	-1781	-1514	-2048
7	Before		1781	1781	2048	1514
(Minimum) (Nominal) (Maximum)						









Before: 24-Nov-2004 13:13

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	2048	1514
1	Before		1804	1781	2048	1514
2	Before		1807	1781	2048	1514
3	Before		1797	1781	2048	1514
4	Before		1747	1781	2048	1514
5	Before		1769	1781	2048	1514
6	Before		-1816	-1781	-1514	-2048
7	Before		1781	1781	2048	1514
(Minimum) (Nominal) (Maximum)						

Before: 24-Nov-2004 13:13

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V34						
Idx	Phase	HRLT A3-A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68600	70000	80500	59500
1	Before		70910	70000	80500	59500
2	Before		71350	70000	80500	59500
3	Before		71220	70000	80500	59500
4	Before		69230	70000	80500	59500
5	Before		70130	70000	80500	59500
6	Before		-70340	-70000	-59500	-80500
7	Before		70000	70000	80500	59500
(Minimum) (Nominal) (Maximum)						

Before: 24-Nov-2004 13:13

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V45						
Idx	Phase	HRLT A4-A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68710	70000	80500	59500
1	Before		71110	70000	80500	59500
2	Before		71500	70000	80500	59500
3	Before		71390	70000	80500	59500
4	Before		69350	70000	80500	59500
5	Before		70240	70000	80500	59500
6	Before		-70530	-70000	-59500	-80500
7	Before		70000	70000	80500	59500
(Minimum) (Nominal) (Maximum)						

Before: 24-Nov-2004 13:13


High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V56						
Idx	Phase	HRLT A5-A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum

Idx	Phase	HRLT A3-A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68840	70000	80500	59500
1	Before		71190	70000	80500	59500
2	Before		71600	70000	80500	59500
3	Before		71500	70000	80500	59500
4	Before		69480	70000	80500	59500
5	Before		70380	70000	80500	59500
6	Before		-70600	-70000	-59500	-80500
7	Before		70000	70000	80500	59500
(Minimum) (Nominal) (Maximum)						
Before: 24-Nov-2004 13:13						









High Resolution Laterolog Array – B Wellsite Calibration						
HRLT VTP						
Idx	Phase	HRLT Torpedo-M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68200	-70000	-59500	-80500
1	Before		-71260	-70000	-59500	-80500
2	Before		-71620	-70000	-59500	-80500
3	Before		-71470	-70000	-59500	-80500
4	Before		-69350	-70000	-59500	-80500
5	Before		-70200	-70000	-59500	-80500
6	Before		70650	70000	80500	59500
7	Before		-70000	-70000	-59500	-80500
(Minimum) (Nominal) (Maximum)						
Before: 24-Nov-2004 13:13						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT VBD						
Idx	Phase	HRLT Bridle#9-M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68200	-70000	-59500	-80500
1	Before		-71210	-70000	-59500	-80500
2	Before		-71570	-70000	-59500	-80500
3	Before		-71440	-70000	-59500	-80500
4	Before		-69330	-70000	-59500	-80500
5	Before		-70190	-70000	-59500	-80500
6	Before		70600	70000	80500	59500
7	Before		-70000	-70000	-59500	-80500
(Minimum) (Nominal) (Maximum)						
Before: 24-Nov-2004 13:13						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT ISO						
Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		284.4	284.0	326.6	241.4
1	Before		281.1	281.1	323.3	238.9
2	Before		281.1	281.1	323.3	238.9
3	Before		281.1	281.1	323.3	238.9
4	Before		281.1	281.1	323.3	238.9
5	Before		281.1	281.1	323.3	238.9
6	Before		281.1	281.1	323.3	238.9
7	Before		281.1	281.1	323.3	238.9







6	Before		281.1	281.1	323.3	238.9
		(Minimum) (Nominal) (Maximum)				

Before: 24-Nov-2004 13:13





High Resolution Laterolog Array – B Wellsite Calibration						
HRLT MV						
Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-320.8	-322.7	-274.3	-371.1
1	Before		-324.5	-322.7	-274.3	-371.1
2	Before		-324.3	-322.7	-274.3	-371.1
3	Before		-319.7	-322.7	-274.3	-371.1
4	Before		-308.6	-322.7	-274.3	-371.1
5	Before		-327.0	-322.7	-274.3	-371.1
6	Before		340.7	322.7	371.1	274.3
7	Before		-322.7	-322.7	-274.3	-371.1
		(Minimum) (Nominal) (Maximum)				

Before: 24-Nov-2004 13:13





High resolution Integrated Logging Tool–DTS / Equipment Identification			
Primary Equipment:			
HILT high-Resolution Mechanical Sonde	HRMS – H	3736	
HILT Rxo Gamma-ray Device	HRGD – H	3737	
HILT Nuclear Back-Scatter Detector	HILT – H		
HILT Nuclear Short-Spacing Detector	HILT – H		
HILT Nuclear Long-Spacing Detector	HILT – H		
Micro Cylindrically Focused Log Device	MCFL – H		
GR Logging Source	GLS – VJ	2957	
HILT High Res. Control Cartridge	HRCC – H	3724	
Auxiliary Equipment:			

High resolution Integrated Logging Tool–DTS Wellsite Calibration									
Stab Measurement Summary									
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value
Before				0.7368	Before				0.4865
	0.6958 (Minimum)	0.7324 (Nominal)	0.7690 (Maximum)			0.4598 (Minimum)	0.4840 (Nominal)	0.5082 (Maximum)	
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value
Before				27610	Before				11930
	26210 (Minimum)	27590 (Nominal)	28970 (Maximum)			11410 (Minimum)	12010 (Nominal)	12610 (Maximum)	
Phase	LS Window Ratio			Value	Phase	LS Window Sum CPS			Value
Before				0.2995	Before				1385
	0.2785 (Minimum)	0.2932 (Nominal)	0.3079 (Maximum)			1328 (Minimum)	1398 (Nominal)	1468 (Maximum)	




Before: 22-Nov-2004 17:28



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
Before				1296	Before				1424
	1247 (Minimum)	1347 (Nominal)	1447 (Maximum)			1322 (Minimum)	1422 (Nominal)	1522 (Maximum)	
Phase	LS PM High Voltage (Command) V			Value	Phase	LS PM High Voltage (Command) V			Value
Before				1320	Before				1320
	1228 (Minimum)	1328 (Nominal)	1428 (Maximum)			1228 (Minimum)	1328 (Nominal)	1428 (Maximum)	




Before: 22-Nov-2004 17:28





High resolution Integrated Logging Tool–DTS Wellsite Calibration									
Crystal Quality Resolutions Calibration									
Phase	BS Crystal Resolution %			Value	Phase	SS Crystal Resolution %			Value
Before				11.22	Before				10.37
	10.70 (Minimum)	11.70 (Nominal)	12.70 (Maximum)			8.918 (Minimum)	9.918 (Nominal)	10.92 (Maximum)	
Phase	LS Crystal Resolution %			Value	Phase	LS Crystal Resolution %			Value
Before				8.872	Before				8.872
	7.926 (Minimum)	8.926 (Nominal)	9.926 (Maximum)			7.926 (Minimum)	8.926 (Nominal)	9.926 (Maximum)	


Before: 22-Nov-2004 17:28





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				3882	Before				3828	Before				3827
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)			
Before: 22–Nov–2004 17:45														

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			7.870	Before			11.87
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 22–Nov–2004 17:45							

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			4.018	Before			178.4	Before			165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		162.2 (Minimum)	178.4 (Nominal)	194.7 (Maximum)		150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)
Before: 22–Nov–2004 17:22											

High resolution Integrated Logging Tool–DTS Wellsite Calibration								
Zero Measurement								
Phase	CNTC Background CPS		Value	Phase	CFTC Background CPS		Value	
Master			25.96	Master			27.87	
Before			26.73	Before			25.37	
5.000 (Minimum)			25.96 (Nominal)	5.000 (Minimum)			27.87 (Nominal)	40.00 (Maximum)
Master: 15–Nov–2004 23:24				Before: 22–Nov–2004 17:24				

High resolution Integrated Logging Tool–DTS			
Wellsite Calibration			
Accelerometer Calibration			
Phase	Z–Axis Acceleration M/S2	Value	
Before		9.775	
	9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)
Before: 24–Nov–2004 11:42			

High resolution Integrated Logging Tool–DTS Master Calibration							
Inversion results							
Phase	Rho Aluminum G/C3		Value	Phase	Rho Magnesium G/C3		Value
Master			2.603	Master			1.684
	2.586 (Minimum)	2.596 (Nominal)	2.606 (Maximum)		1.676 (Minimum)	1.686 (Nominal)	1.696 (Maximum)
Phase	Pe Aluminum		Value	Phase	Pe Magnesium		Value
Master			2.558	Master			2.630
	2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)		2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)
Master: 15–Nov–2004 21:30							

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>			0.5370	Master	<div><div></div></div>			0.4926	Master	<div><div></div></div>			0.8351
	−0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)			−1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)			−1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)	
Phase	BS Max Deviation %			Value	Phase	SS Max Deviation %			Value	Phase	LS Max Deviation %			Value
Master	<div><div></div></div>			1.364	Master	<div><div></div></div>			1.007	Master	<div><div></div></div>			1.655
	−1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)			−2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)			−3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)	

Combinable Magnetic Resonance Tool – B / Equipment Identification

Primary Equipment:

CMR-B Sonde

CMRS – BA

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CMR Cartridge

CMRC – BA

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Auxiliary Equipment:

Combinable Magnetic Resonance Tool – B Master Calibration

Calibration Fixture Measurement

Calibration Fixture Measurement											
Phase	Tool Temperature MCAL	DEGC	Value	Phase	LOOP Measurement MCAL	Value	Phase	Hall Probe B0 MCAL	MTES	Value	
Master	<div><div></div></div>		25.23	Master	<div><div></div></div>	1685	Master	<div><div></div></div>		52.67	
	10.00 (Minimum)	27.00 (Nominal)	44.00 (Maximum)		1500 (Minimum)	2300 (Nominal)	2900 (Maximum)		50.00 (Minimum)	52.00 (Nominal)	55.00 (Maximum)
Phase	Cal. Fixture Amplitude MCAL			Value							
Master	<div><div></div></div>		28.84								
	25.00 (Minimum)	37.50 (Nominal)	50.00 (Maximum)								

Master: 24-Nov-2004 12:52

Company: **Origin Energy Resources Ltd.****Schlumberger**Well: **Trefoil-1**Field: **Trefoil**Rig: **ENSCO 102**Country: **Australia**

SP-HRLA-PEX-CMR-C

Combinable Magnetic Resonance Tool

1:500 Scale