

Multimode Array Sonic Tool Field Print 1

Company: DCP Midstream LP

Well: ZIA AGI D2

Field: AGI Devonian Exploration

County: Lea State: New Mexico

Multimode Array Sonic Tool

Field Print

Lea
AGI Devonian Exploration
1893' FSL & 950' FWL
ZIA AGI D2
DCP Midstream LP

1893' FSL & 950' FWL	Elev.:	K.B.	3574.00 ft
Section:19, Township: T19S, Abstract:R32S		G.L.	3547.00 ft
		D.F.	3573.00 ft
Permanent Datum:	Ground Level	Elev.:	3547.00 f
Log Measured From:	Kelly Bushing	27.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		
API Serial No.	Section:	Township:	Abstract:
30-025-42207	19	T19S	R32S

Logging Date 11-Dec-2016

Run Number 2B

Depth Driller 14771.00 ft

Schlumberger Depth 14771.00 ft

Bottom Log Interval 14770.00 ft

Top Log Interval 13635.00 ft

Casing Driller Size @ Depth 7 in @ 13622.00 ft

Casing Schlumberger 13635 ft

Bit Size 6 in

Type Fluid In Hole Fresh Water

Density 8.4 lbm/gal

Fluid Loss PH 0 cm3

MUD Source of Sample Active Tank

RM @ Meas Temp 0.25 ohm.m @ 60 degF

RMF @ Meas Temp 0.19 ohm.m @ 60 degF

RMC @ Meas Temp

Source RMF RMC Calculated

RM @ BHT RMF @ BHT 0.08 @ 206 0.06 @ 206

Max Recorded Temperatures

Circulation Stopped Time 10-Dec-2016 12:30:00

Logger on Bottom Time 11-Dec-2016 16:15:00

Unit Number Location: 2191 Midland

Recorded By J.Shtull

Witnessed By Jim Hunter

Disclaimer

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8.2 Log (DSI 5 inch General RA)

9. Tail

10. Composite 1 Main Pass 1" = 100'

10.1 Integration Summary

10.2 Composite Summary

10.3 Log (DSI 1 inch General)

Remarks and Equipment Summary

2B: Toolstring				2B: Remarks
Equip name LEH-QC	Length 80.18	MP name Offset	CTEM 74.22 ACCZ 0.00 HV 0.00 Gamma Ra 72.35 y TelStatus 71.22 PPC-B Cali pers 70.08 MAST-B:854 6 ECH-SF:8081 MAPC-BA MAMS-CA:854 6 MASS-BA:808 4 MAXS-BA:801 5 MAMS 49.27	Thank you for choosing Schlumberger Wireline
				Toolstring ran as per tool sketch
				Logging program and intervals confirmed with client prior to job
				Limestone matrix used
				Depth correlation confirmed with geologist
EDTC-B EDTH-B:8003 EDTG-A EDTC-B	77.72			
PPC-B:8179 PPC-B:8179	71.22			
MAST-B:854 6 ECH-SF:8081 MAPC-BA MAMS-CA:854 6 MASS-BA:808 4 MAXS-BA:801 5	64.71			



FBST-E
ECH-MJA:389
0
FBPC-A
AH-287
FBSH-D:801
FBAC-B
DHRU-F
FBSS-B

23.42

MAXS

23.42

Deviation
GPIT-F Inc
linometer

9.94

9.94

GPIT

0.00

Buttons

1.33



TOOL_ZERO

Lengths are in ft

Maximum Outer Diameter = 5.000 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL_ZERO

Depth Summary

2B

Depth Measuring Device

Type	IDW-B
Serial Number	6609
Calibration Date	03-Jun-2016
Calibrator Serial Number	
Calibration Cable Type	
Wheel Correction 1	-3
Wheel Correction 2	-2

Tension Device

Type	CMTD-B/A
Serial Number	3599
Calibration Date	09-Dec-2016
Calibrator Serial Number	13
Number of Calibration Points	10
Calibration Root Mean Square Error	10
Calibration Peak Error	15

Logging Cable

Type	7-46P-XS
Serial Number	U714051
Length	22100.00 ft
Conveyance Type	Wireline
Rig Type	Land

2B:Depth Control Parameters

Log Sequence	Subsequent Log In the Well
Reference Log Name	"Porosity" - J.Shtull
Reference Log Run Number	2A
Reference Log Date	29-Nov-2016

Depth Control Remarks

IDW used as primary depth control device
ZChart used as secondary depth control device

Composite 1

Main Pass 2" = 100'

Software Version

Acquisition System

Maxwell 2016 SP3

Application Patch

Version

6.3.75395.3100

Wireline_Hotfix-MAST-2016SP3_6.3.77788

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
2B	Log[4]:Up	Up	13970.54 ft	14785.44 ft	11-Dec-2016 4:47:16 PM	11-Dec-2016 5:33:52 PM	ON	6.50 ft	No

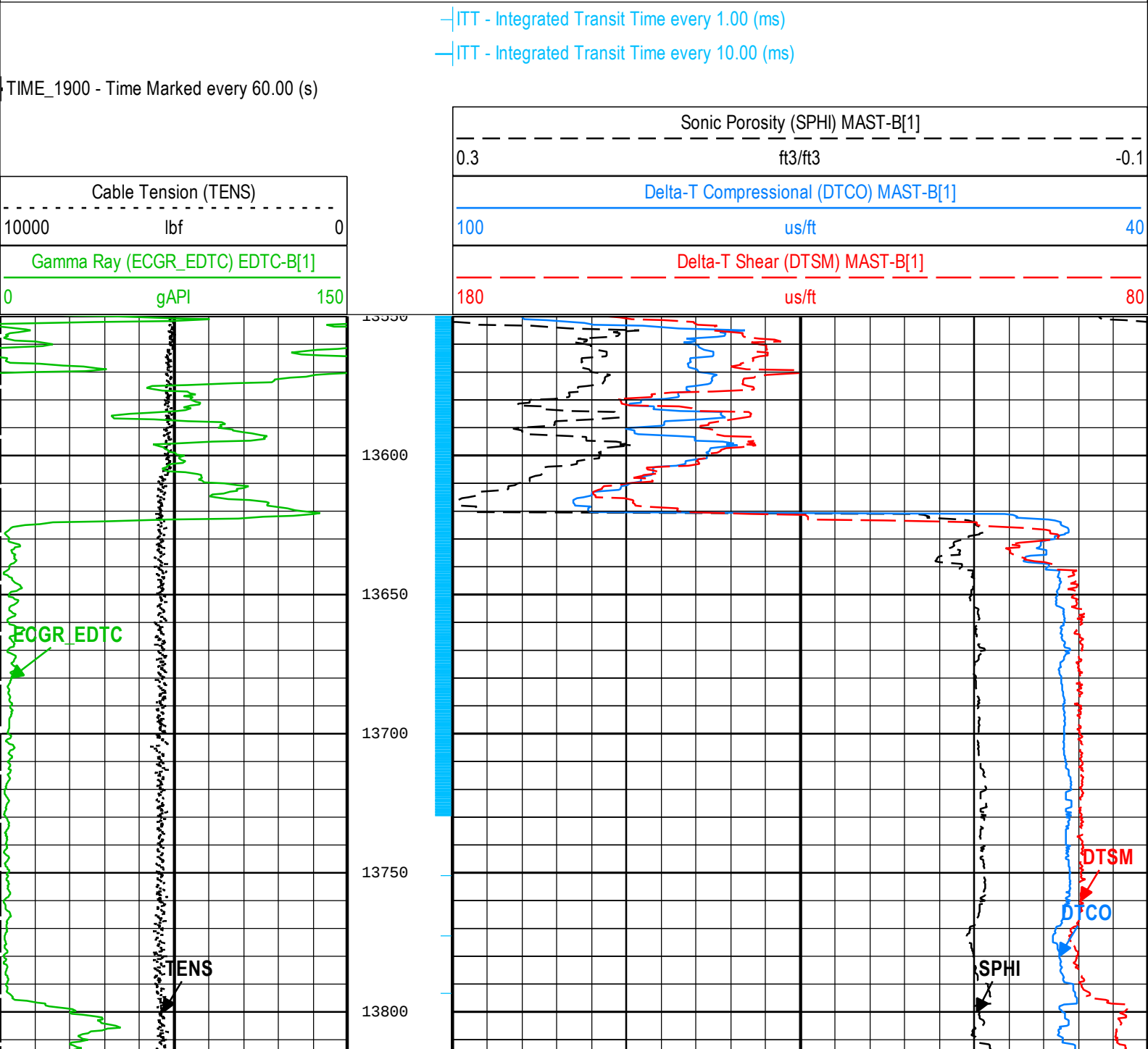
2B	Log[5]:Up	Up	13678.28 ft	14073.63 ft	11-Dec-2016 5:40:33 PM	11-Dec-2016 6:06:53 PM	ON	6.50 ft	No
2B	Log[6]:Up	Up	12946.49 ft	13864.80 ft	11-Dec-2016 6:09:20 PM	11-Dec-2016 6:48:37 PM	ON	6.00 ft	No

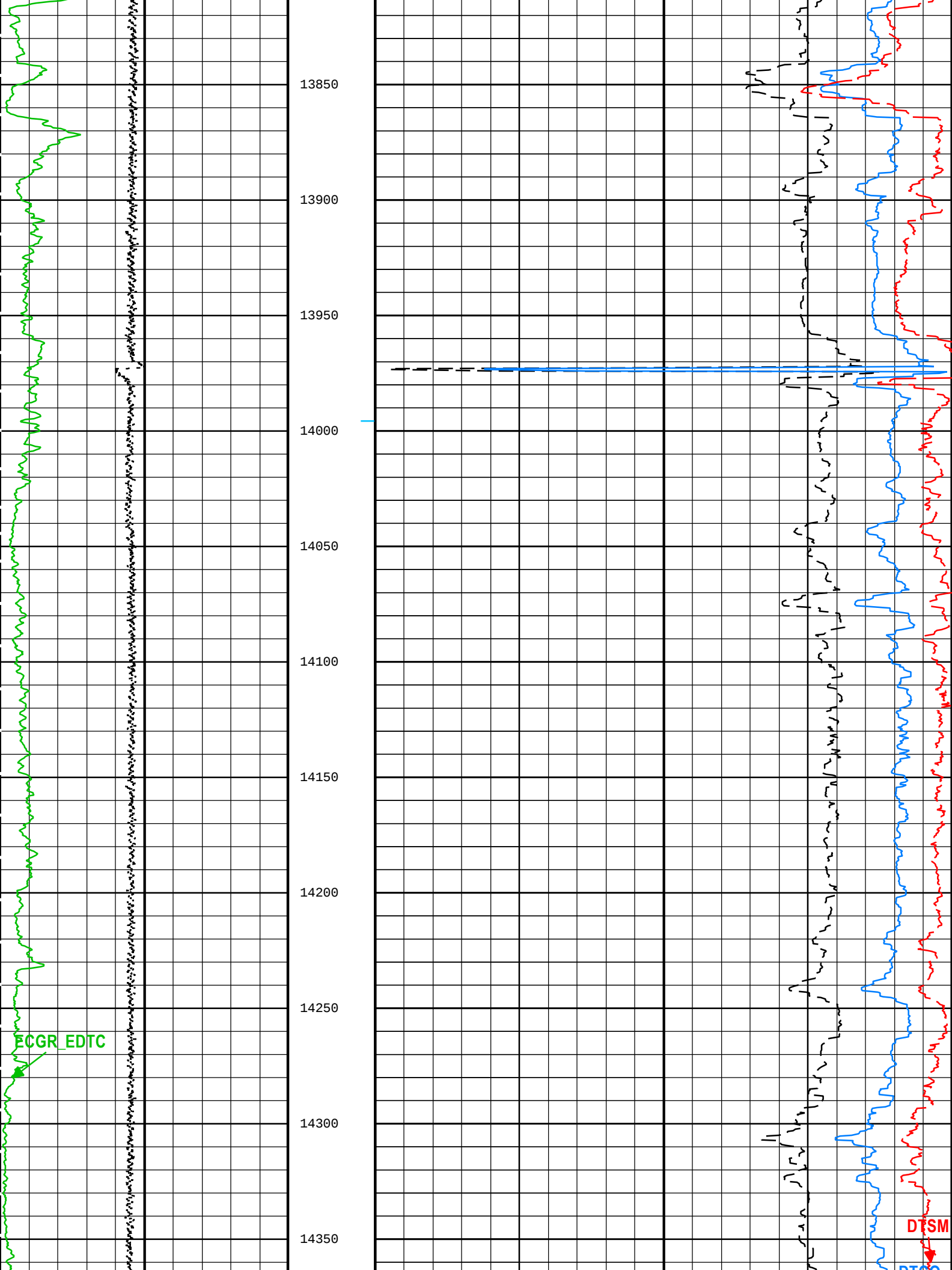
All depths are referenced to toolstring zero

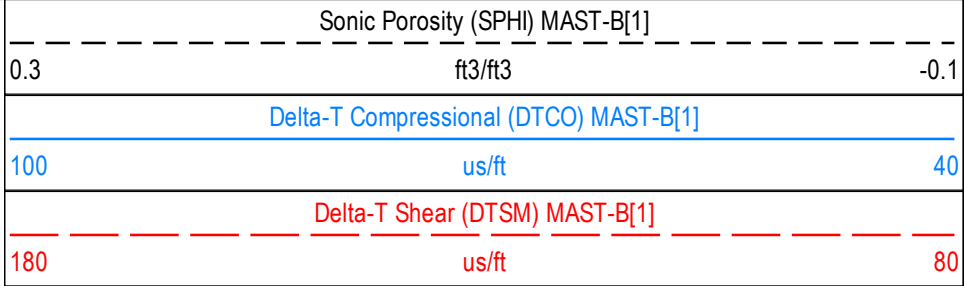
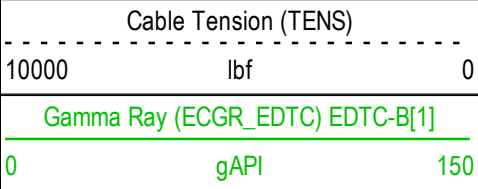
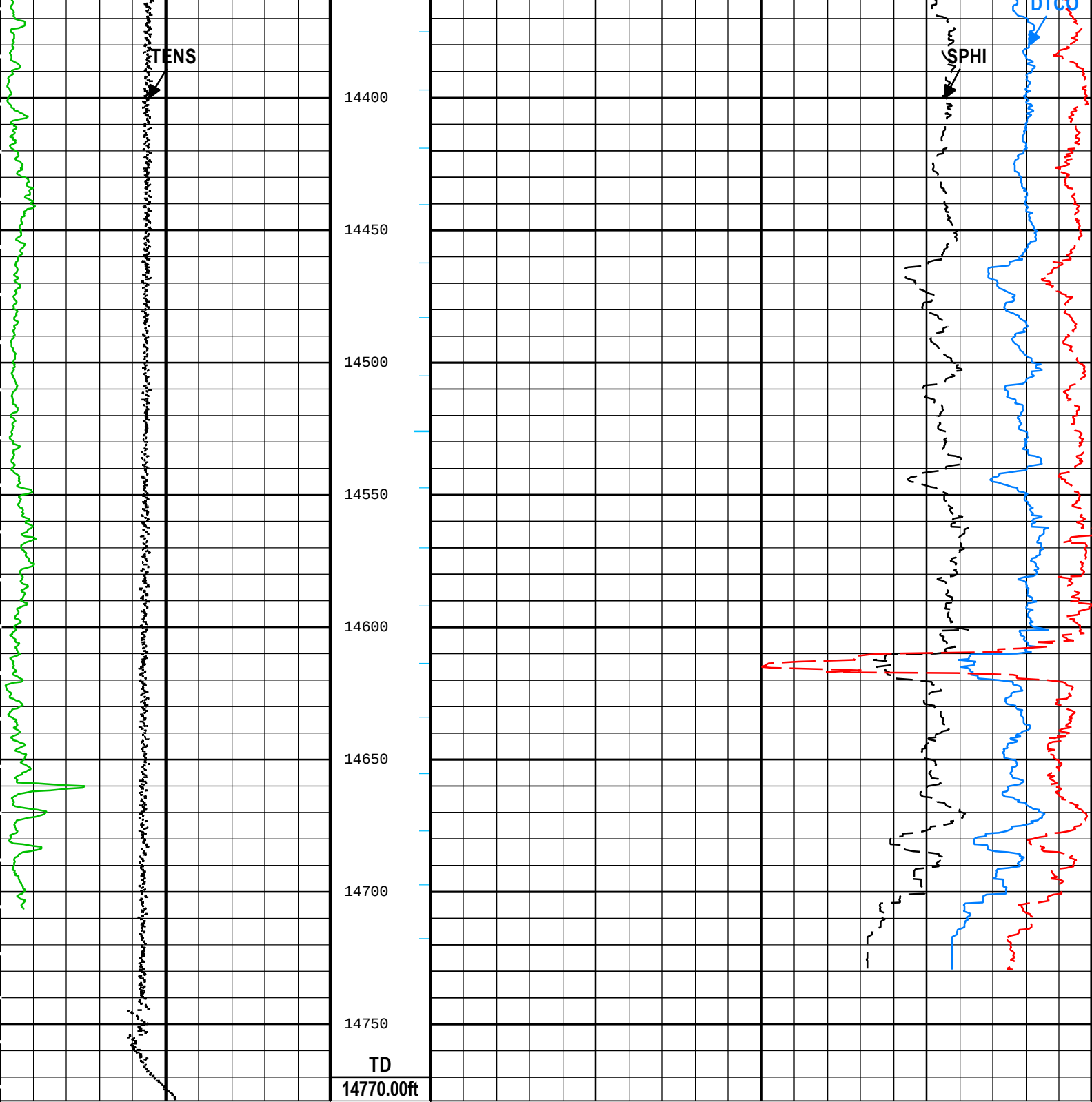
Log	Company:DCP Midstream LP	Well:ZIA AGI D2
	Composite 1:S035	

Description: HRLT BASIC LOG Format: Log (DSI 2 inch General) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Dec-2016 21:13:15

Channel	Source	Sampling
DTCO	MAST-B[1]:MAMS-B[1]:MAMS-CA[1]	6in
DTSM	MAST-B[1]:MAMS-B[1]:MAMS-CA[1]	6in
GR	EDTC-B[1]:EDTC-B[1]:EDTC-B[1]	6in
ITT	MAST-B[1]:MAMS-B[1]:MAMS-CA[1]	6in
SPHI	MAST-B[1]:MAMS-B[1]:MAMS-CA[1]	6in
TENS	WLWorkflow	1in
TIME_1900	WLWorkflow	0.1in







TIME_1900 - Time Marked every 60.00 (s)

—ITT - Integrated Transit Time every 10.00 (ms)

—ITT - Integrated Transit Time every 1.00 (ms)

Composite 1

Main Pass 5" = 100'

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
2B	Log[4]:Up	Up	13970.54 ft	14785.44 ft	11-Dec-2016 4:47:16 PM	11-Dec-2016 5:33:52 PM	ON	6.50 ft	No
2B	Log[5]:Up	Up	13678.28 ft	14073.63 ft	11-Dec-2016 5:40:33 PM	11-Dec-2016 6:06:53 PM	ON	6.50 ft	No
2B	Log[6]:Up	Up	12946.49 ft	13864.80 ft	11-Dec-2016 6:09:20 PM	11-Dec-2016 6:48:37 PM	ON	6.00 ft	No

All depths are referenced to toolstring zero

Log

Company:DCP Midstream LP Well:ZIA AGI D2

Composite 1:S035

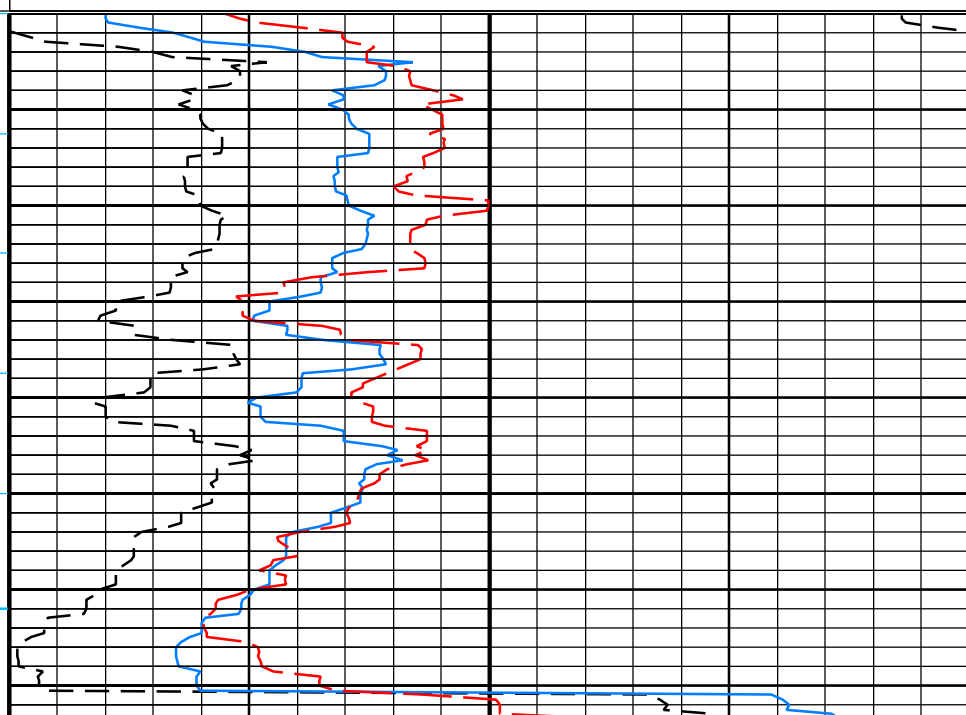
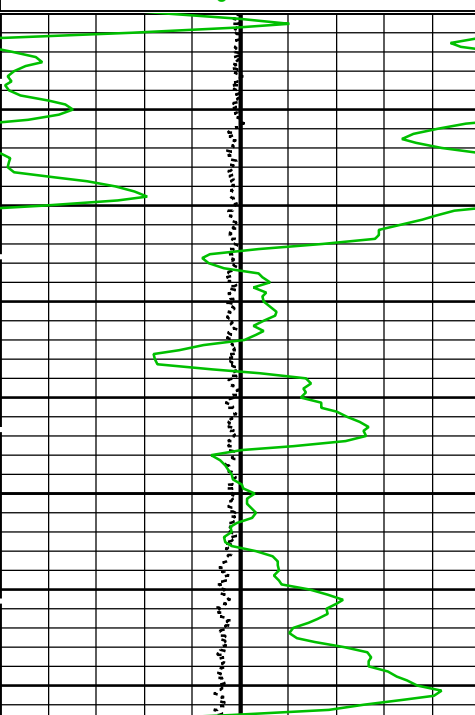
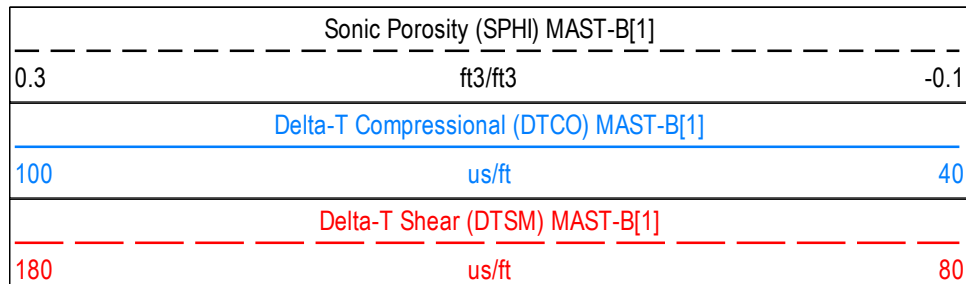
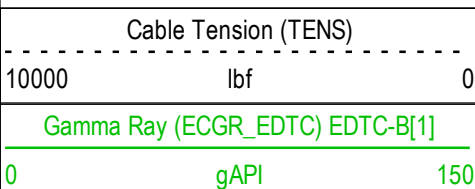
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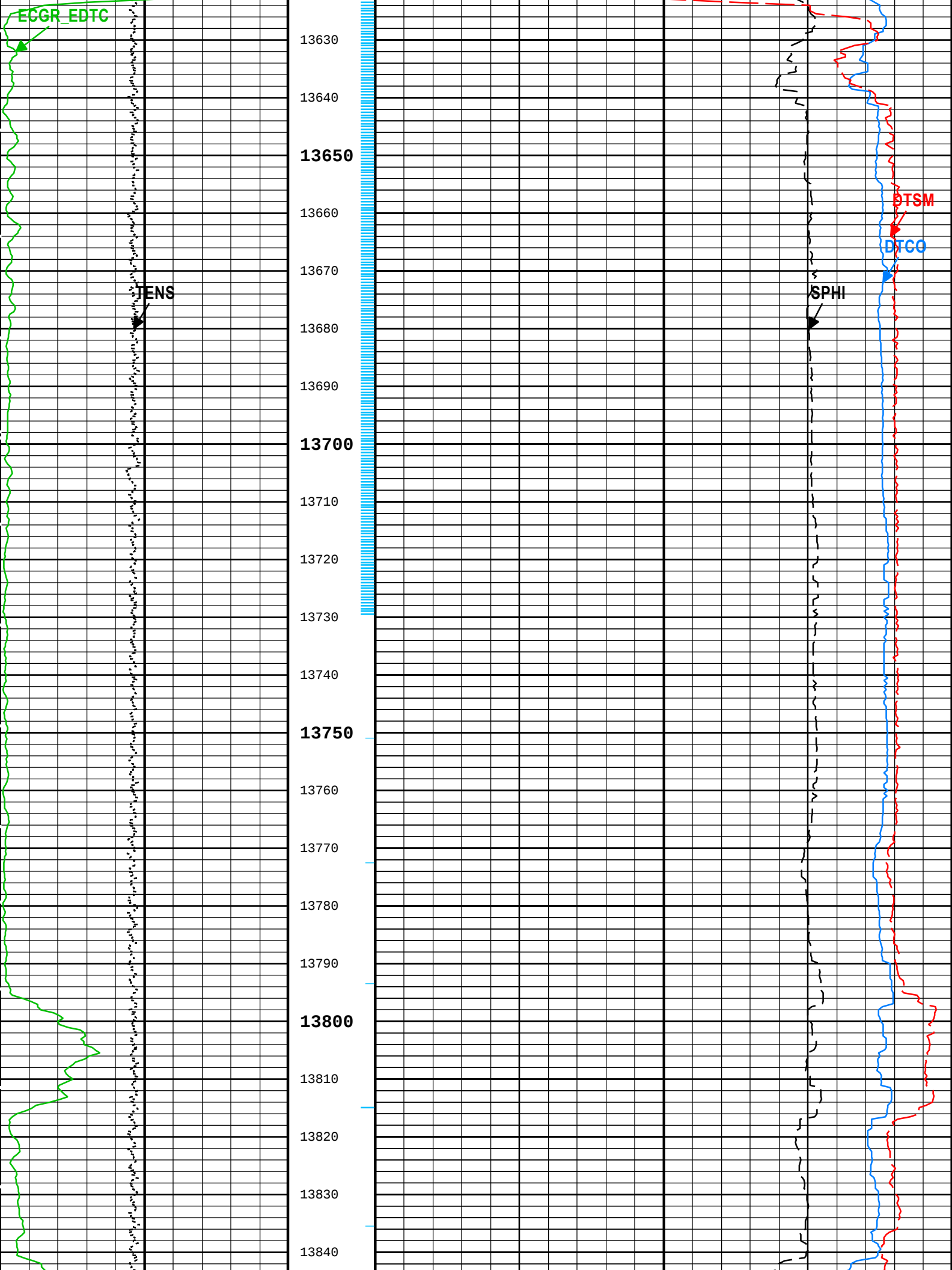
Channel	Source	Sampling
DTCO	MAST-B[1]:MAMS-B[1]:MAMS-CA[1]	6in
DTSM	MAST-B[1]:MAMS-B[1]:MAMS-CA[1]	6in
GR	EDTC-B[1]:EDTC-B[1]:EDTC-B[1]	6in
ITT	MAST-B[1]:MAMS-B[1]:MAMS-CA[1]	6in
SPHI	MAST-B[1]:MAMS-B[1]:MAMS-CA[1]	6in
TENS	WLWorkflow	1in
TIME_1900	WLWorkflow	0.1in

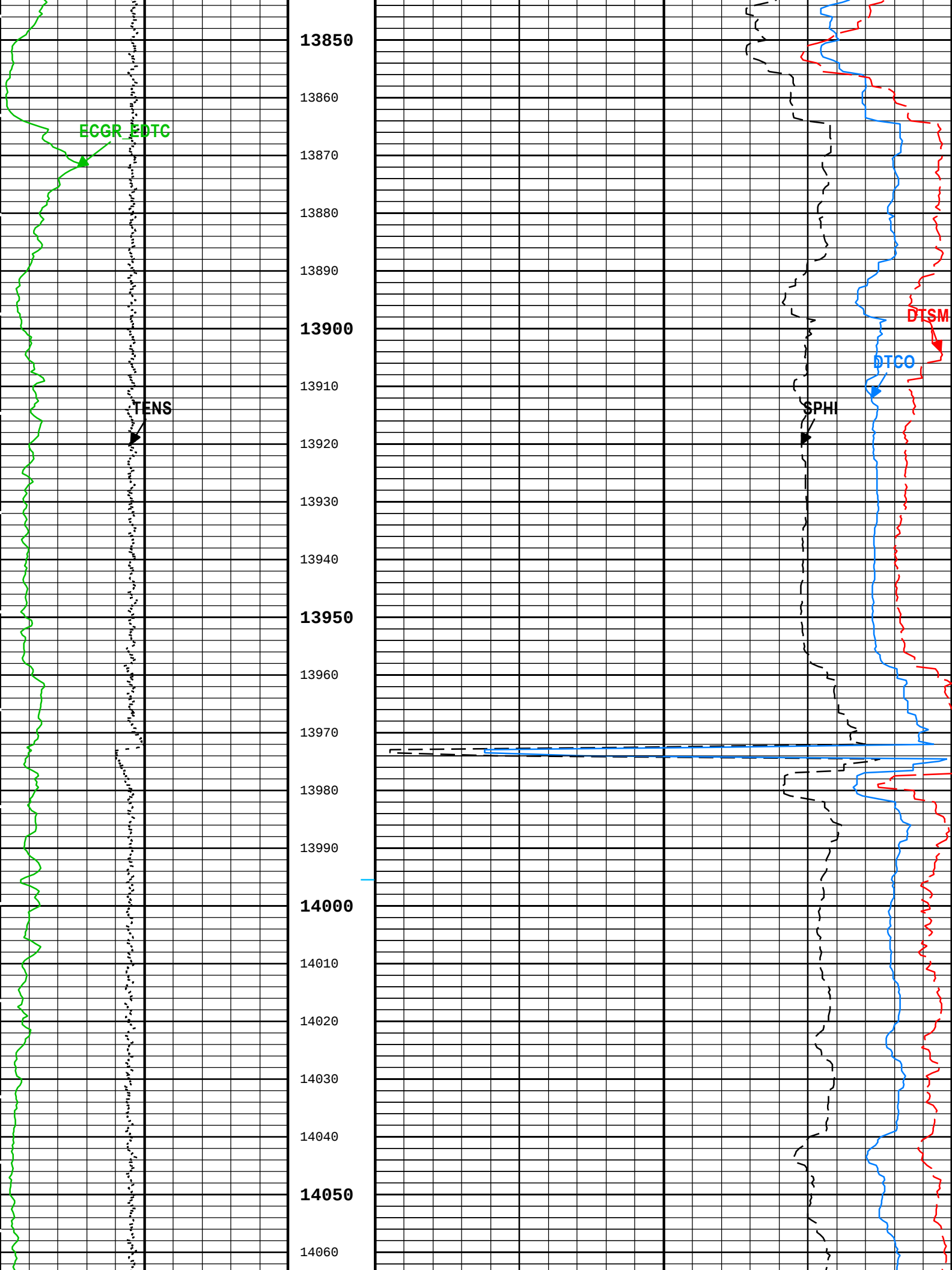
—ITT - Integrated Transit Time every 1.00 (ms)

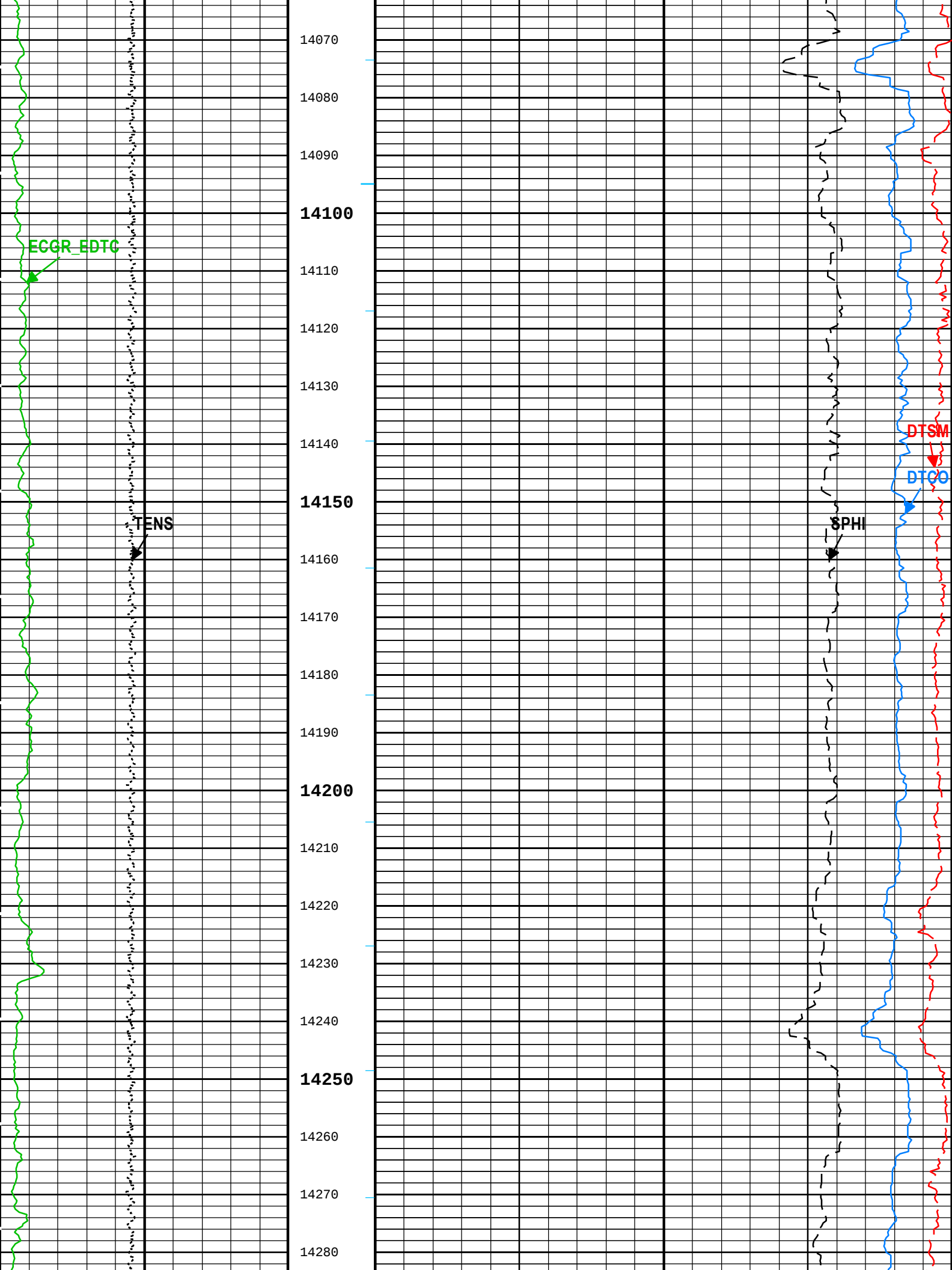
—ITT - Integrated Transit Time every 10.00 (ms)

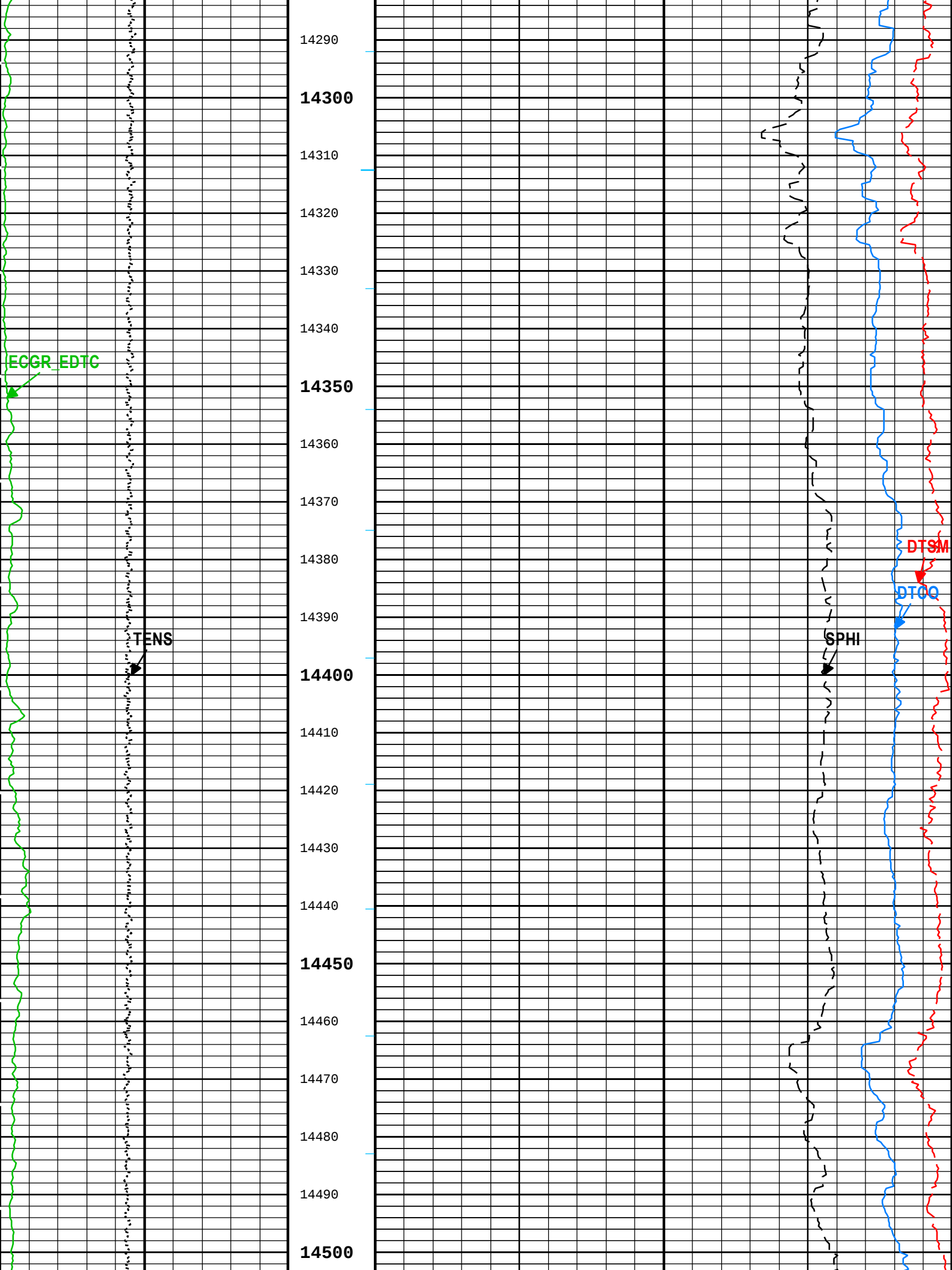
TIME_1900 - Time Marked every 60.00 (s)

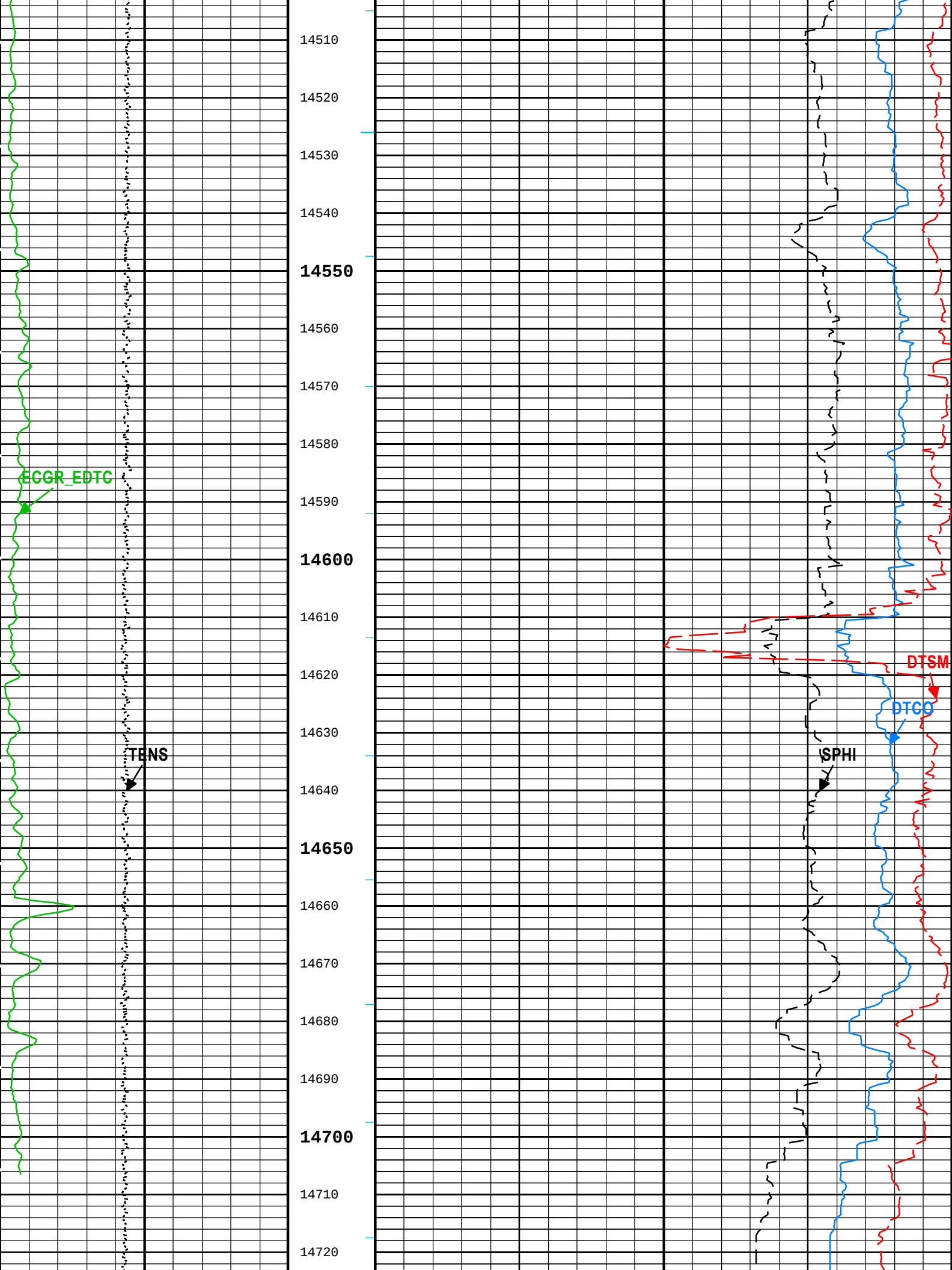


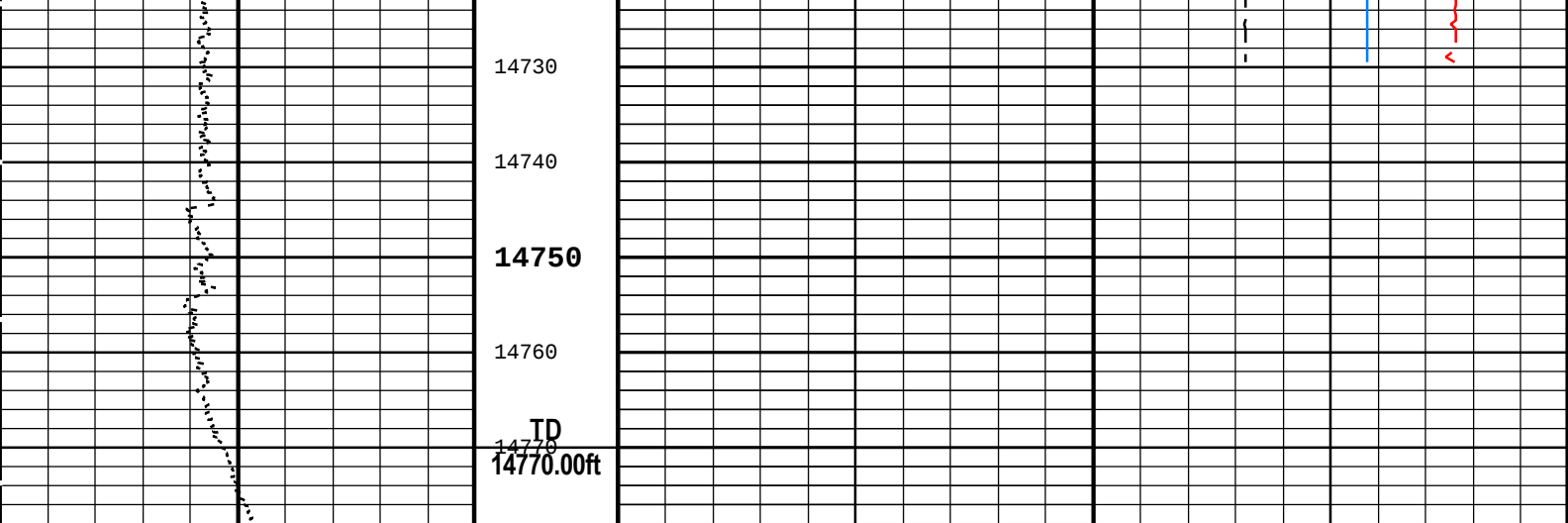












Cable Tension (TENS)		Sonic Porosity (SPHI) MAST-B[1]	
10000	lbf	0.3	ft3/ft3
Gamma Ray (ECGR_EDTC) EDTC-B[1]		Delta-T Compressional (DTCO) MAST-B[1]	
0	gAPI	100	us/ft
		Delta-T Shear (DTSM) MAST-B[1]	
		180	us/ft

TIME_1900 - Time Marked every 60.00 (s)

- ITT - Integrated Transit Time every 10.00 (ms)
- ITT - Integrated Transit Time every 1.00 (ms)

Description: HRLT BASIC LOG Format: Log (DSI 5 inch General) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Dec-2016 21:13:23

Channel Processing Parameters				
2B: Parameters				
Parameter	Description	Tool	Value	Unit
ISSBAR	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	6	in
CBLO	Casing Bottom (Logger)	WLSESSION	13635	ft
CDEN	Cement Density	EDTC-B	2	g/cm3
CDS	Correction for Delta-T Shale, Empirical	Borehole	100	us/ft
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	8.4	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DTF	Delta-T Fluid	Borehole	189	us/ft
DTM	Delta-T Matrix	Borehole	47.6	us/ft
DTMD	Borehole Fluid Slowness	Borehole	206	us/ft
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	C2	
SFTY	Slowness Formation Type (Fast, Intermediate, Slow, etc.)	Borehole	Fast	
SPFS	Sonic Porosity Formula	Borehole	Wyllie	
VPVSA	Estimated P-Wave Velocity to S-Wave Velocity Ratio for Slowness-Time Coherence	MAST-B	1.8	

Tool Control Parameters				
2B: Parameters				
Parameter	Description	Tool	Value	Unit
AMIP	Adaptive Mode Initial Phase	ERST-E	0	deg

	Adaptive Mode Initial Phase	FBST-E	0	deg
APM	Acquisition Phase Mode	FBST-E	WBM - Adaptive Phase Control	
CBOOTSTA_MAPC	MAMS Controller Boot Status	MAST-B	1	
CONTROLLER_FIRM_REV_MAPC	MAPC Firmware Revision of Controller Electronics	MAST-B	1840	
EMXGMOD	EMEX and Gain Modes	FBST-E	Time Zoned	
FLM	Logging Mode	FBST-E	Full Image Mode	
GAIN_FBST	Electronic Gain Value in Manual Mode	FBST-E	0 dB	
GARM_A	Electronic Gain Value for Arm A	FBST-E	0 dB	
GARM_B	Electronic Gain Value for Arm B	FBST-E	0 dB	
GARM_C	Electronic Gain Value for Arm C	FBST-E	0 dB	
GARM_D	Electronic Gain Value for Arm D	FBST-E	0 dB	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	Time Zoned	ft/h
MAX_TOOL_SPEED	Maximum service speed allowed for, or attained by, a logging tool.	MAST-B	Time Zoned	ft/h
MPSC	Manual Phase Shift Compensation	FBST-E	0	deg
MSMT_LIST	Measurement List	MAST-B	[MUM, MLM, MFM, MFL, 90C, 00C]	
PROD_MASTUI	MAST Product Class Selection	MAST-B	STD	
SENSOR10_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #10	MAST-B	1057	
SENSOR11_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #11	MAST-B	1057	
SENSOR12_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #12	MAST-B	1057	
SENSOR13_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #13	MAST-B	1057	
SENSOR1_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #1	MAST-B	1057	
SENSOR2_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #2	MAST-B	1057	
SENSOR3_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #3	MAST-B	1057	
SENSOR4_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #4	MAST-B	1057	
SENSOR5_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #5	MAST-B	1057	
SENSOR6_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #6	MAST-B	1057	
SENSOR7_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #7	MAST-B	1057	
SENSOR8_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #8	MAST-B	1057	
SENSOR9_FIRM_REV_MAPC	MAPC Firmware Revision of Sensor Electronics Station #9	MAST-B	1057	
RBOOTSTA_MAPC	MAMS Receiver Boot Status	MAST-B	1	
SERVICE_LIST	Service Selection List	MAST-B	[STSTC, NMSTC, XDSTC, YDSTC, FMSTC, ANISO, CRV, BHC, PBHC, NMATD, FMATD]	
XVOL	EMEX Voltage	FBST-E	0	V

2BTime Zoned Parameters

Pass Log[4]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
EMXGMOD	EMEX= Auto and Gain= Auto	11-Dec-2016 16:47:43	11-Dec-2016 17:33:52	14778.85	14025.47
MAX_LOG_SPEED	1197	11-Dec-2016 16:47:16	11-Dec-2016 16:55:46	14778.85	14638.81
MAX_LOG_SPEED	1278	11-Dec-2016 16:55:46	11-Dec-2016 16:57:49	14638.81	14602.86
MAX_LOG_SPEED	1200	11-Dec-2016 16:57:49	11-Dec-2016 17:33:52	14602.86	14025.47
MAX_TOOL_SPEED	1197	11-Dec-2016 16:47:16	11-Dec-2016 16:55:46	14778.85	14638.81
MAX_TOOL_SPEED	1278	11-Dec-2016 16:55:46	11-Dec-2016 16:57:49	14638.81	14602.86
MAX_TOOL_SPEED	1200	11-Dec-2016 16:57:49	11-Dec-2016 17:33:52	14602.86	14025.47

Pass Log[5]:Up

EMXGMOD	EMEX= Auto and Gain= Auto	11-Dec-2016 17:42:19	11-Dec-2016 18:06:53	14044.45	13749.08
MAX_LOG_SPEED	1210	11-Dec-2016 17:42:19	11-Dec-2016 18:06:53	14044.45	13749.08
MAX_TOOL_SPEED	1210	11-Dec-2016 17:42:19	11-Dec-2016 18:06:53	14044.45	13749.08

Pass Log[6]:Up

EMXGMOD	EMEX= Auto and Gain= Auto	11-Dec-2016 18:09:20	11-Dec-2016 18:22:51	13779.4	13698.99
EMXGMOD	EMEX= Manual and Gain= Manual	11-Dec-2016 18:22:51	11-Dec-2016 18:48:37	13698.99	12946.52
MAX_LOG_SPEED	1210	11-Dec-2016 18:09:20	11-Dec-2016 18:26:35	13779.4	13635.39
MAX_LOG_SPEED	1289	11-Dec-2016 18:26:35	11-Dec-2016 18:31:45	13635.39	13543
MAX_LOG_SPEED	1200	11-Dec-2016 18:31:45	11-Dec-2016 18:48:37	13543	12946.52
MAX_TOOL_SPEED	1210	11-Dec-2016 18:09:20	11-Dec-2016 18:26:35	13779.4	13635.39
MAX_TOOL_SPEED	1289	11-Dec-2016 18:26:35	11-Dec-2016 18:31:45	13635.39	13543
MAX_TOOL_SPEED	1200	11-Dec-2016 18:31:45	11-Dec-2016 18:48:37	13543	12946.52

All depth are at tool zero.

Composite 1

Repeat Pass 5" = 100'

Composite Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
2B	Repeat[3]:Up	Up	14416.66 ft	14781.06 ft	11-Dec-2016 4:24:23 PM	11-Dec-2016 4:44:09 PM	ON	5.21 ft	No
2B	Log[4]:Up	Up	13970.54 ft	14785.44 ft	11-Dec-2016 4:47:16 PM	11-Dec-2016 5:33:52 PM	ON	6.50 ft	No
2B	Log[5]:Up	Up	13678.28 ft	14073.63 ft	11-Dec-2016 5:40:33 PM	11-Dec-2016 6:06:53 PM	ON	6.50 ft	No
2B	Log[6]:Up	Up	12946.49 ft	13864.80 ft	11-Dec-2016 6:09:20 PM	11-Dec-2016 6:48:37 PM	ON	6.00 ft	No

All depths are referenced to toolstring zero

Log

Company:DCP Midstream LP Well:ZIA AGI D2 Composite 1:S035

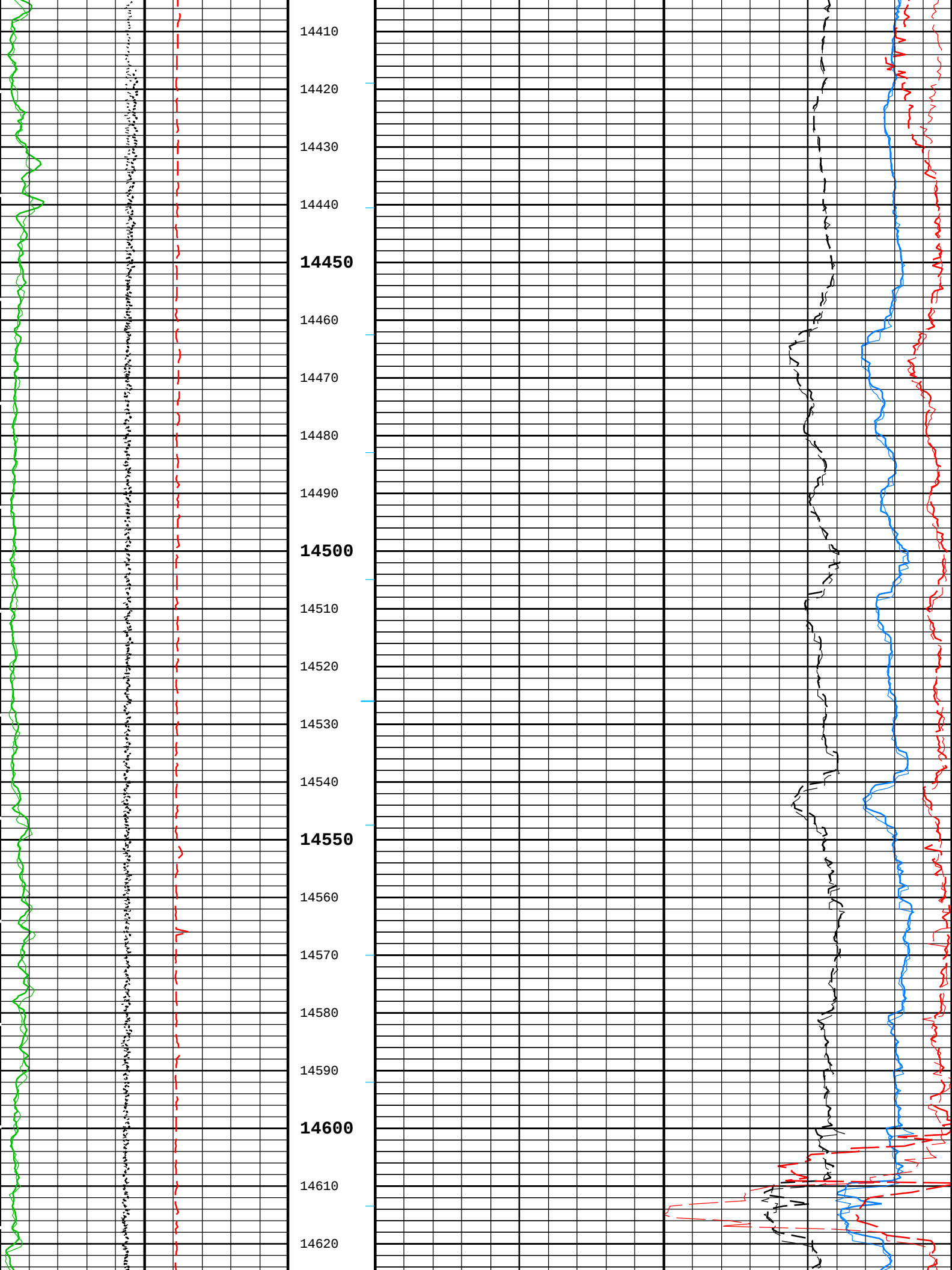
Description: HRLT BASIC LOG Format: Log (DSI 5 inch General RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 11-Dec-2016 21:13:25

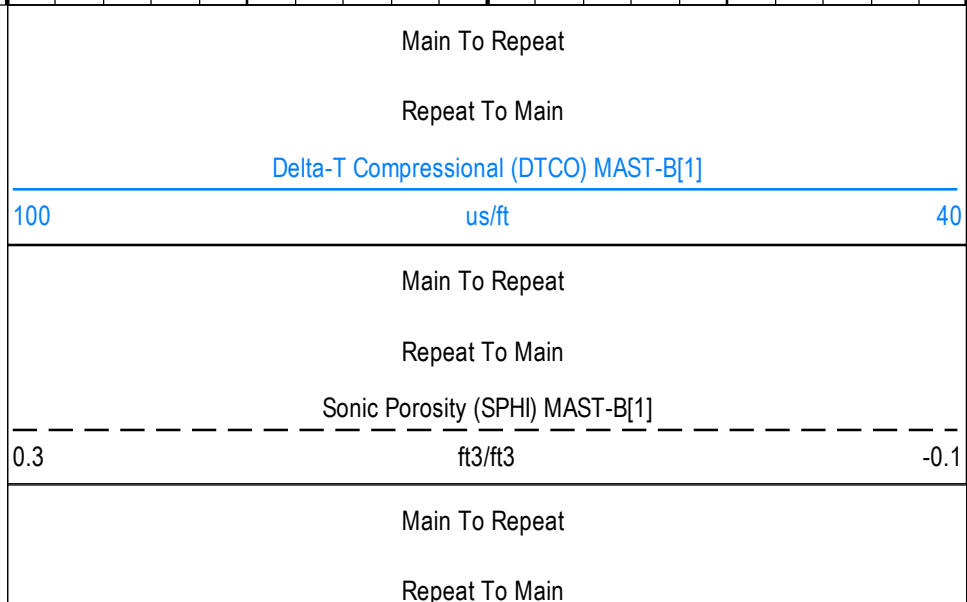
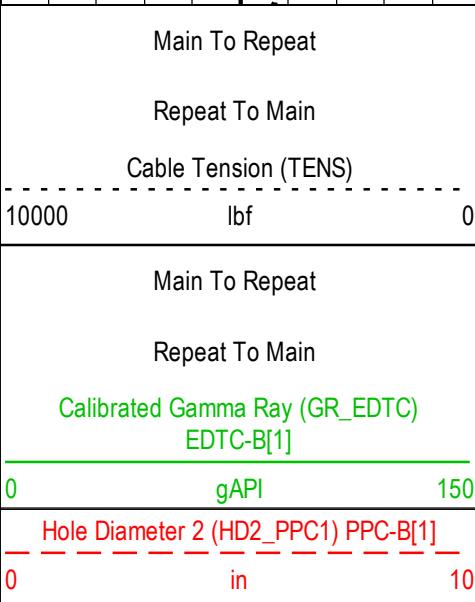
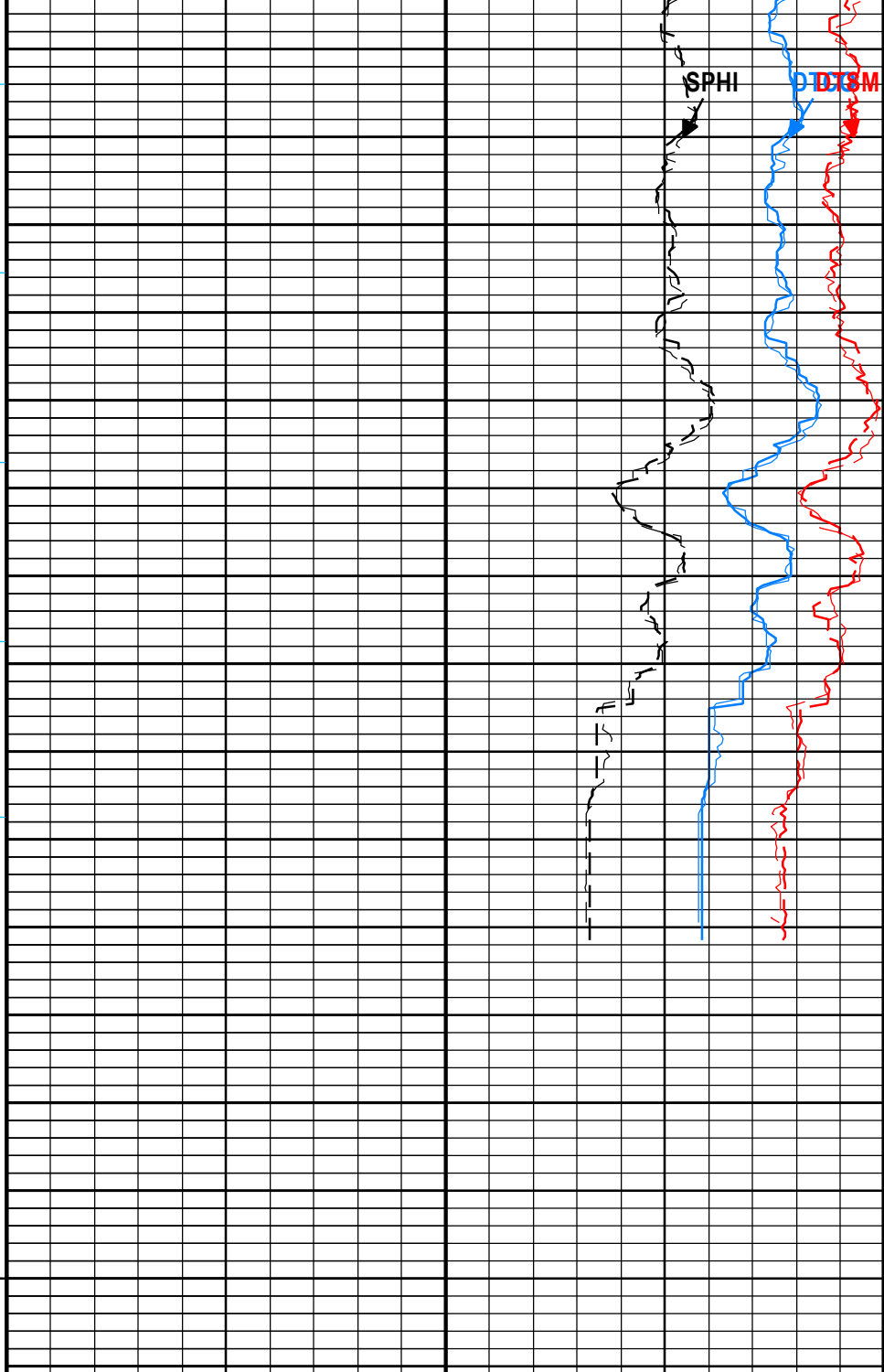
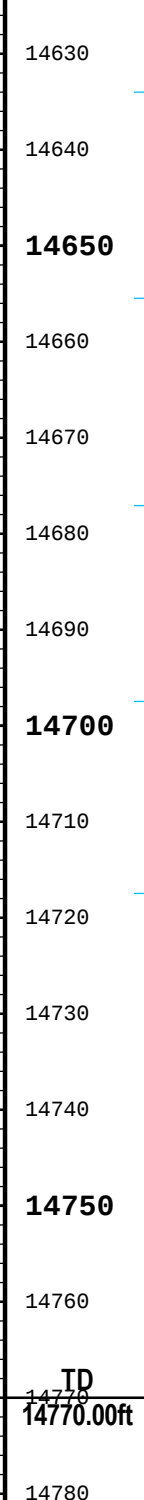
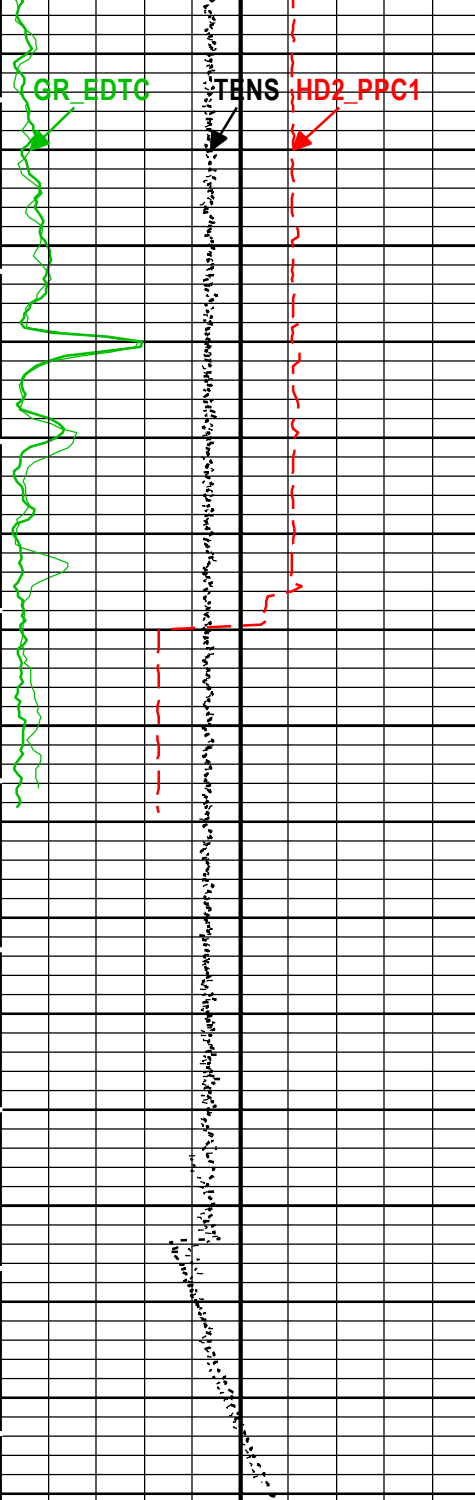
—ITT - Integrated Transit Time every 1.00 (ms)

—ITT - Integrated Transit Time every 10.00 (ms)

TIME_1900 - Time Marked every 60.00 (s)

Main To Repeat	Main To Repeat
Repeat To Main	Repeat To Main
Cable Tension (TENS)	Delta-T Compressional (DTCO) MAST-B[1]
10000 lbf 0	100 us/ft 40
Main To Repeat	Main To Repeat
Repeat To Main	Repeat To Main
Sonic Porosity (SPHI) MAST-B[1]	
0.3 ft3/ft3 -0.1	
Main To Repeat	Main To Repeat
Repeat To Main	Repeat To Main
Calibrated Gamma Ray (GR_EDTC) EDTC-B[1]	Delta-T Shear (DTSM) MAST-B[1]
0 gAPI 150	180 us/ft 80
Hole Diameter 2 (HD2_PPC1) PPC-B[1]	
0 in 10	





80

—ITT - Integrated Transit Time every 1.00 (ms)

Description: HRLT BASIC LOG Format: Log (DSI 5 inch General RA) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 11-Dec-2016 21:13:25

Company: DCP Midstream LP

Well: ZIA AGI D2

Field: AGI Devonian Exploration

County: Lea

State: New Mexico

Multimode Array Sonic Tool

Field Print

Composite 1

Main Pass 1" = 100'

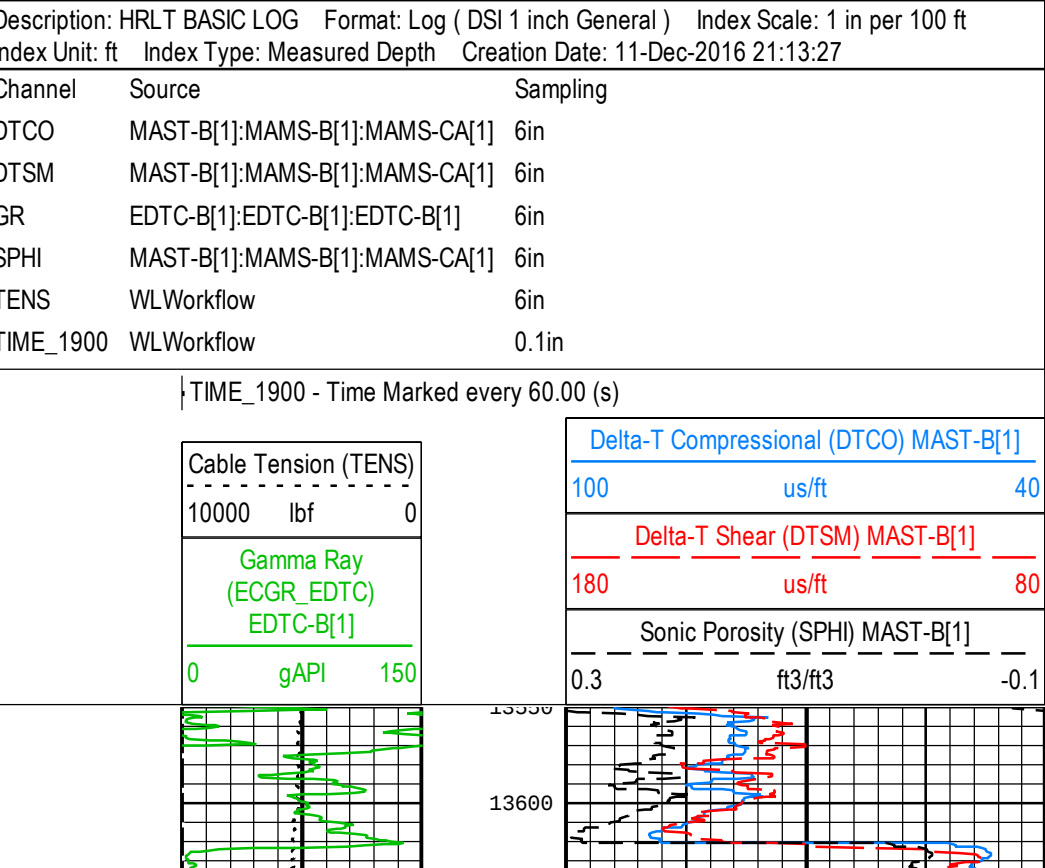
Composite Summary

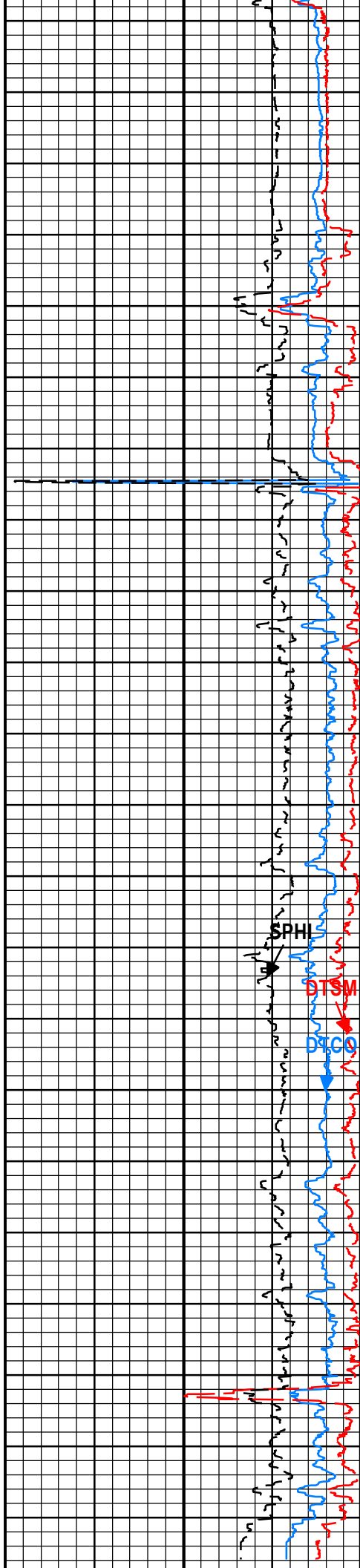
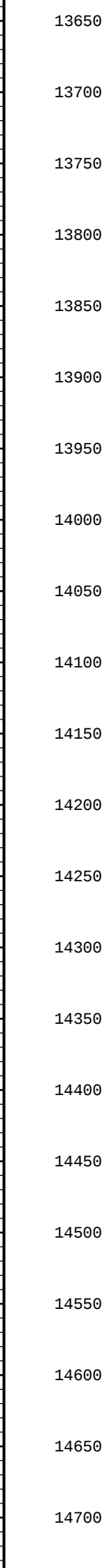
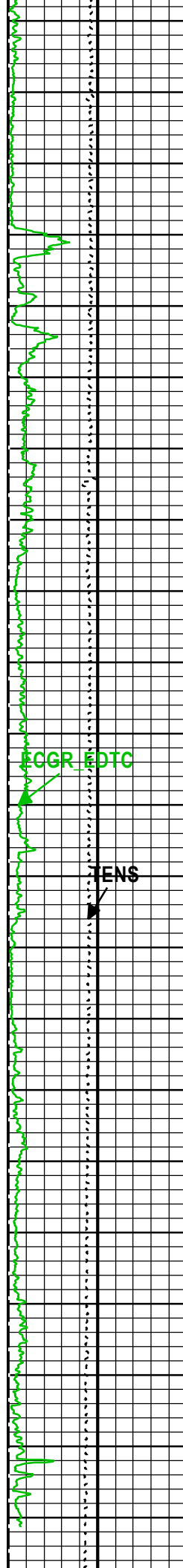
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
2B	Log[4]:Up	Up	13970.54 ft	14785.44 ft	11-Dec-2016 4:47:16 PM	11-Dec-2016 5:33:52 PM	ON	6.50 ft	No
2B	Log[5]:Up	Up	13678.28 ft	14073.63 ft	11-Dec-2016 5:40:33 PM	11-Dec-2016 6:06:53 PM	ON	6.50 ft	No
2B	Log[6]:Up	Up	12946.49 ft	13864.80 ft	11-Dec-2016 6:09:20 PM	11-Dec-2016 6:48:37 PM	ON	6.00 ft	No

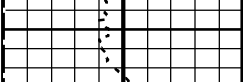
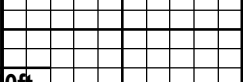
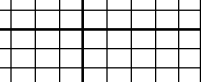
All depths are referenced to toolstring zero

Log

Company:DCP Midstream LP Well:ZIA AGI D2
Composite 1:S035





			14750 TD 14770.008								
Cable Tension (TENS) 10000 lbf 0						Delta-T Compressional (DTCO) MAST-B[1] 100 us/ft 40					
Gamma Ray (ECGR_EDTC) EDTC-B[1] 0 gAPI 150						Delta-T Shear (DTSM) MAST-B[1] 180 us/ft 80					
						Sonic Porosity (SPHI) MAST-B[1] 0.3 ft3/ft3 -0.1					
TIME_1900 - Time Marked every 60.00 (s)											
Description: HRLT BASIC LOG Format: Log (DSI 1 inch General) Index Scale: 1 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Dec-2016 21:13:27											