

COMPANIA: YPF S.A.

POZO: YPF.Ch.Gbk-736

CAMPO: GRIMBEEK

PROVINCIA: CHUBUT

PAIS: ARGENTINA



COMBINADA

ESCALA: 1/200

AIT-LDL-CNL-CAL
XPT

Elev.: B.V. 648 m
N. T. 642.7 m
M. R. 647.7 m

Ref. Permanente: NIVEL DEL TERRENO Elev.: 642.7 m
Reg. Medido Desde: NIVEL DEL TERRENO 0.0 m sobre nivel ref.
Perforacion Medida Desde: NIVEL DEL TERRENO

UWI: AR0100007250 Equipo PI-359 Longitud X: 4.951.707,22 Latitud Y: 2.596.864,94

Provincia: CHUBUT
Campo: GRIMBEEK
Locacion: ARCS
Pozo: YPF.Ch.Gbk-736
Compania: YPF S.A.

Fecha	14-Sep-2007		
Corrida No.	1		
Prof. Perforador	1250 m		
Prof. Registro	1253 m		
Primera Lectura	1250.6 m		
Ultima Lectura	354.5 m		
Fondo Tuberia Perforador	9.625 in @	353.71 m	@
Fondo Tuberia Registro	354.5 m		
Diametro Trepano	8.750 in		
Tipo De Lodo	POLIMERICO - PHPA		
Densidad	Viscosidad	1.12 g/cm3	54 s
Perdidas	PH	6 cm3	8.5
Fuente Muestra De Lodo	PILETA		
RM @ Temp.	5.500 ohm.m @	4 degC	@
RMF @ Temp.	2.160 ohm.m @	3 degC	@
RMC @ Temp.	5.600 ohm.m @	7 degC	@
Fuente: RMF	RMC	PRENSA	PRENSA
RM @ T. Fdo.	RMF @ T. Fdo.	1.991 @ 49	0.767 @ 49 @ @
Temp. Maxima Medida	49 degC		
Circulacion Final	Hora	14-Sep-2007	4:15
Registro Fondo	Hora	14-Sep-2007	9:15
Unidad No.	Locacion	3064	ARCS
Registrado por:	CAROLINA MAGGI		
Testigo	CARINA CEVASCO		

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

DEPTH SUMMARY LISTING

Date Created: 14-SEP-2007 10:03:38

Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B	Type: CMTD-B/A	Type: 7-46P-XS
Serial Number: 4983	Serial Number: 2193	Serial Number: 6133
Calibration Date: 22-Jun-2007	Calibration Date: 18-Ago-2007	Length: 4049.88 M
Calibrator Serial Number: 31	Calibrator Serial Number: 1028	Conveyance Method: Wireline
Calibration Cable Type: 7-46P	Calibration Gain: 0.91	Rig Type: LAND
Wheel Correction 1: -6	Calibration Offset: -313.00	
Wheel Correction 2: -4		

Depth Control Parameters

Log Sequence: First Log In the Well
Rig Up Length At Surface: 72.00 M
Rig Up Length At Bottom: 72.00 M
Rig Up Length Correction: 0.00 M
Stretch Correction: 0.80 M
Tool Zero Check At Surface: 0.00 M

Depth Control Remarks

1. Primera carrera en el pozo y perfil de referencia de profundidad.
2. Procedimiento de control de profundidad estandar de Schlumberger aplicado en esta carrera.
3. Correccion por estiramiento del cable 0.8 m.
- 4.
- 5.
- 6.

LIMITACION DE RESPONSABILIDAD

LA UTILIZACION Y CONFIANZA EN LOS DATOS AQUI GRABADOS POR PARTE DE LA NOMBRADA COMPANIA (Y POR CUALQUIERA DE SUS SUBSIDIARIAS, AFILIADAS, REPRESENTANTES, AGENTES, CONSULTORES Y EMPLEADOS) ESTA SUJETA A LOS TERMINOS Y CONDICIONES ACORDADOS ENTRE SCHLUMBERGER Y LA COMPANIA, INCLUYENDO: (a) RESTRICCIONES EN EL USO DE LOS DATOS GRABADOS; (b) LIMITACION DE RESPONSABILIDAD Y REVOCACION DE GARANTIAS EN RELACION A LA UTILIZACION Y CONFIANZA EN LOS DATOS GRABADOS POR PARTE DE LA COMPANIA, Y (c) LA SOLA Y TOTAL RESPONSABILIDAD DEL CLIENTE POR CUALQUIER INTERPRETACION HECHA O DECISION BASADA EN EL USO DE ESTOS DATOS.

OTROS SERVICIOS # 1	OTROS SERVICIOS # 2
OS1: AIT-LDL-CNL-CAL	OS1:
OS2: XPT	OS2:
OS3:	OS3:
OS4:	OS4:
OS5: PI-359	OS5:
OBSERVACIONES: CORRIDA # 1	OBSERVACIONES: CORRIDA # 2

1. Primera carrera en el pozo y perfil de referencia de profundidad.
2. Esquema del pozo segun datos del perforador.
3. Coordenadas definitivas.
4. Herramienta corrida segun diagrama.
5. Maxima temperatura registrada 49 degC desde termometro en punta de herramienta.
6. Datos adicionales del lodo: Cl = 300 ppm, Ca = 140 ppm.
7. Maxima desviacion del pozo: 1.25 deg segun datos del perforador

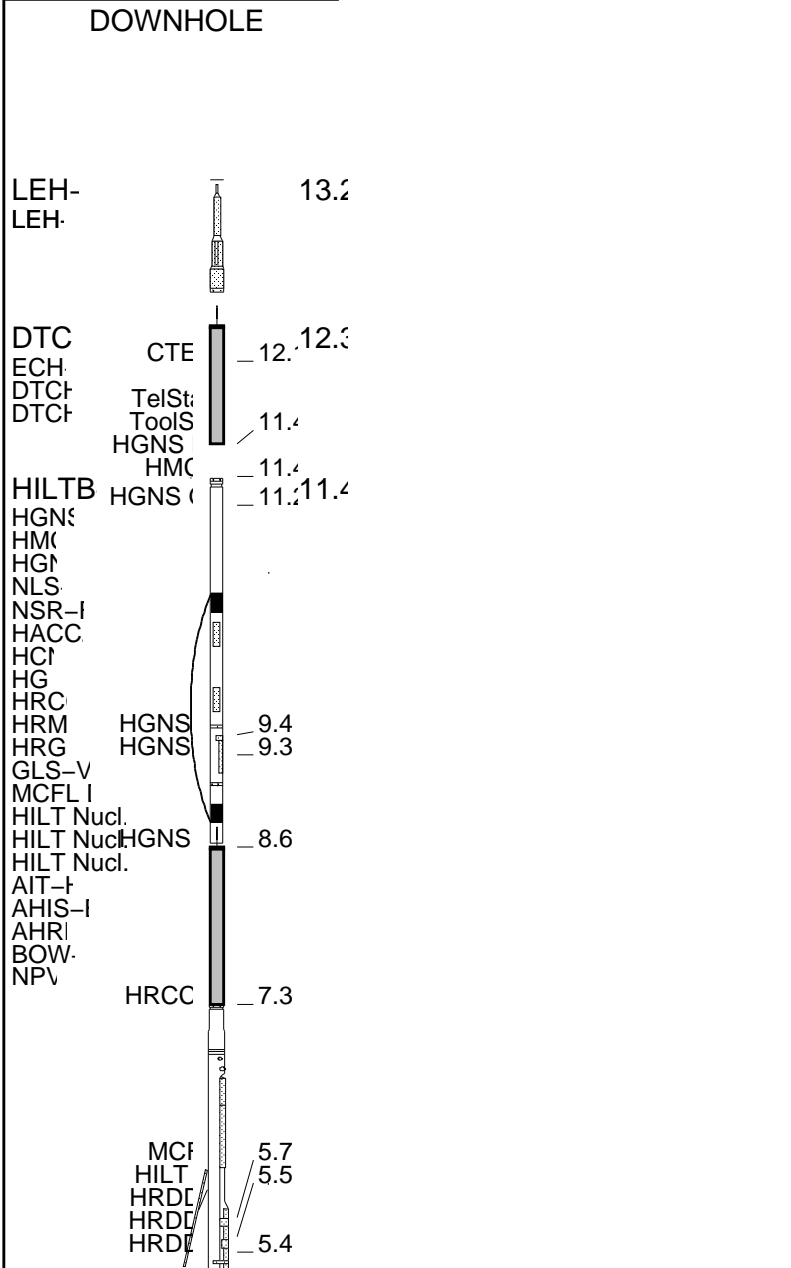
- 7. Maxima desviación del pozo: 1.20 seg según datos del perforador.
- 8. Ultima circulacion termino el dia 14-Sep-2007 a las 4:15 hs y duro 3 hs.
- 9. FPHI= DPHZ, FNUM=0.81, y FEXP=2 utilizados el calculo de RWA.
- 10. Lectura de LDL afectada en zonas de mal caliper.
- 11. AIT corrida descentralizada usando standoffs de 1.5".
- 12. Repetibilidad afectada en zonas de mal caliper.
- 13. LDL y CNL corrido hasta 725 m a pedido del cliente.

CORRIDA #1			CORRIDA #2		
ORDEN DE SERVICIO:			ORDEN DE SERVICIO:		
VERSION DEL PROGRAMA:			VERSION DEL PROGRAMA:		
NIVEL DEL LODO:			NIVEL DEL LODO:		
15C0-309			0 m		
INTERVALO REGISTRADO	COMIENZO	FINAL	INTERVALO REGISTRADO	COMIENZO	FINAL

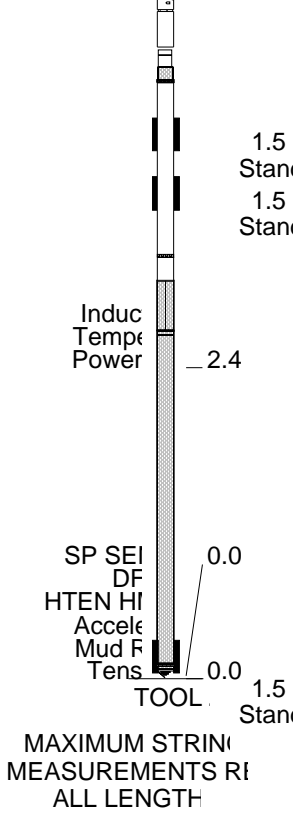
DESCRIPCION DEL EQUIPO

CORRIDA # 1	CORRIDA # 2
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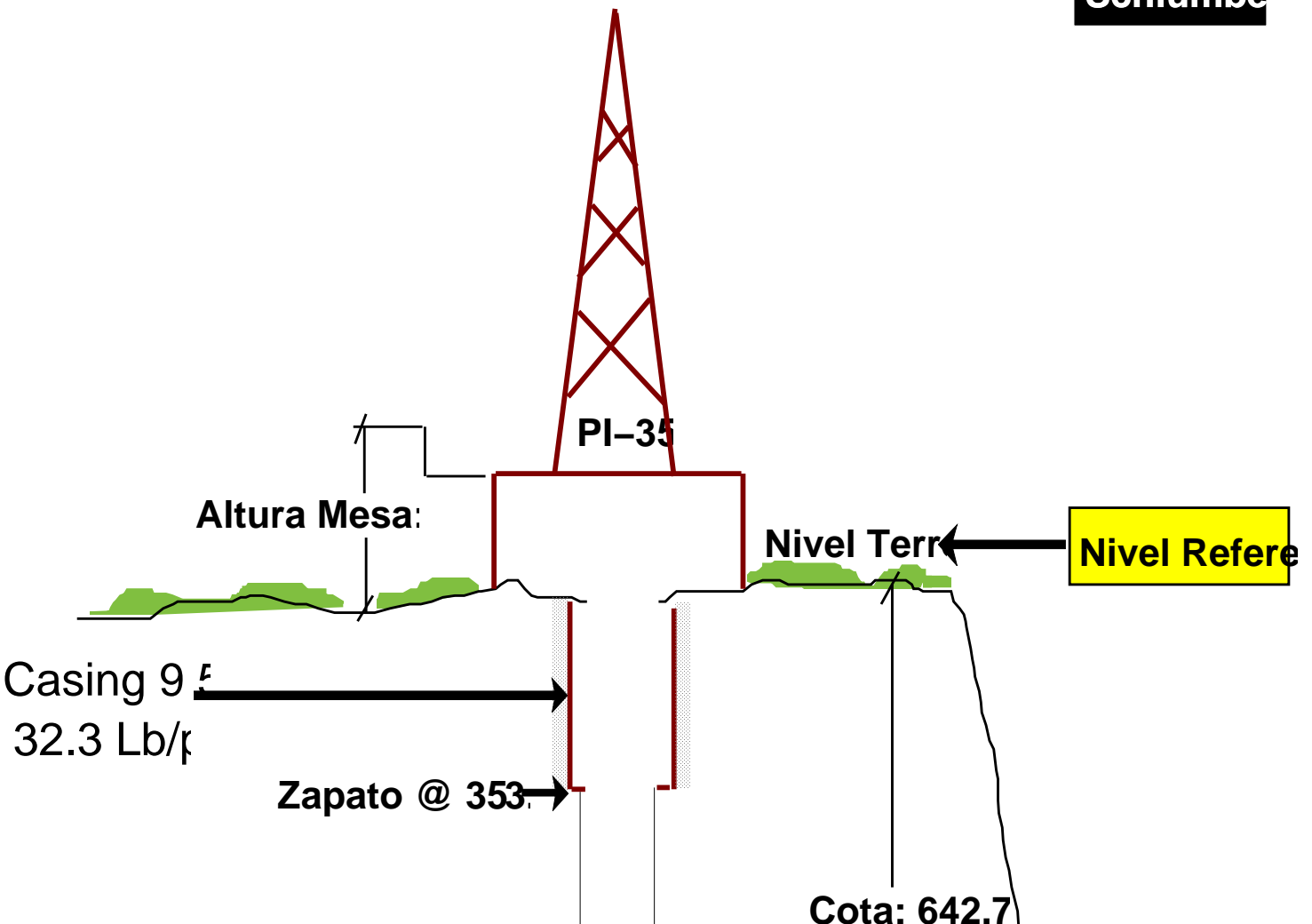
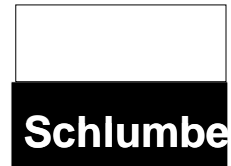
SURFACE I
 GSR-
 NCT
 CNB-
 NCS



Empty space for equipment description for Run #2.



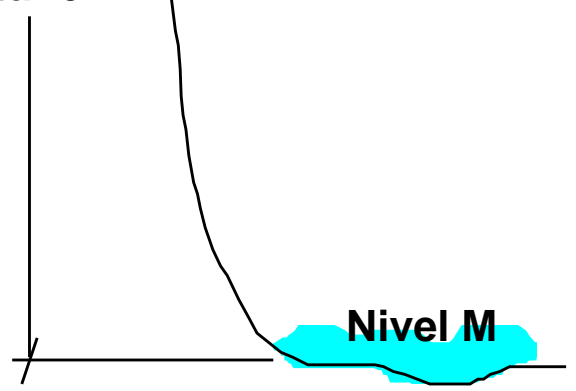
YPF.Ch.Gbk



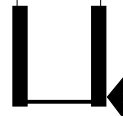
Trepano



8 3/4" @



Nivel M



Fondo @ 125

Schlumberger

TRAMO PRINCIPAL

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:9	PRODUCER	15-Sep-2007 15:33	1258.2 M	235.2 M
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:8	PRODUCER	15-Sep-2007 17:03	1258.2 M	340.9 M
CUSTOMER	AIT_TLD_MCFL_CNL_039PUC	FN:9	CUSTOMER	15-Sep-2007 17:03	1258.2 M	340.9 M

Integrated Hole/Cement Volume Summary

Hole Volume = 33.93 M3

Cement Volume = 20.16 M3 (assuming 5.50 IN casing O.D.)

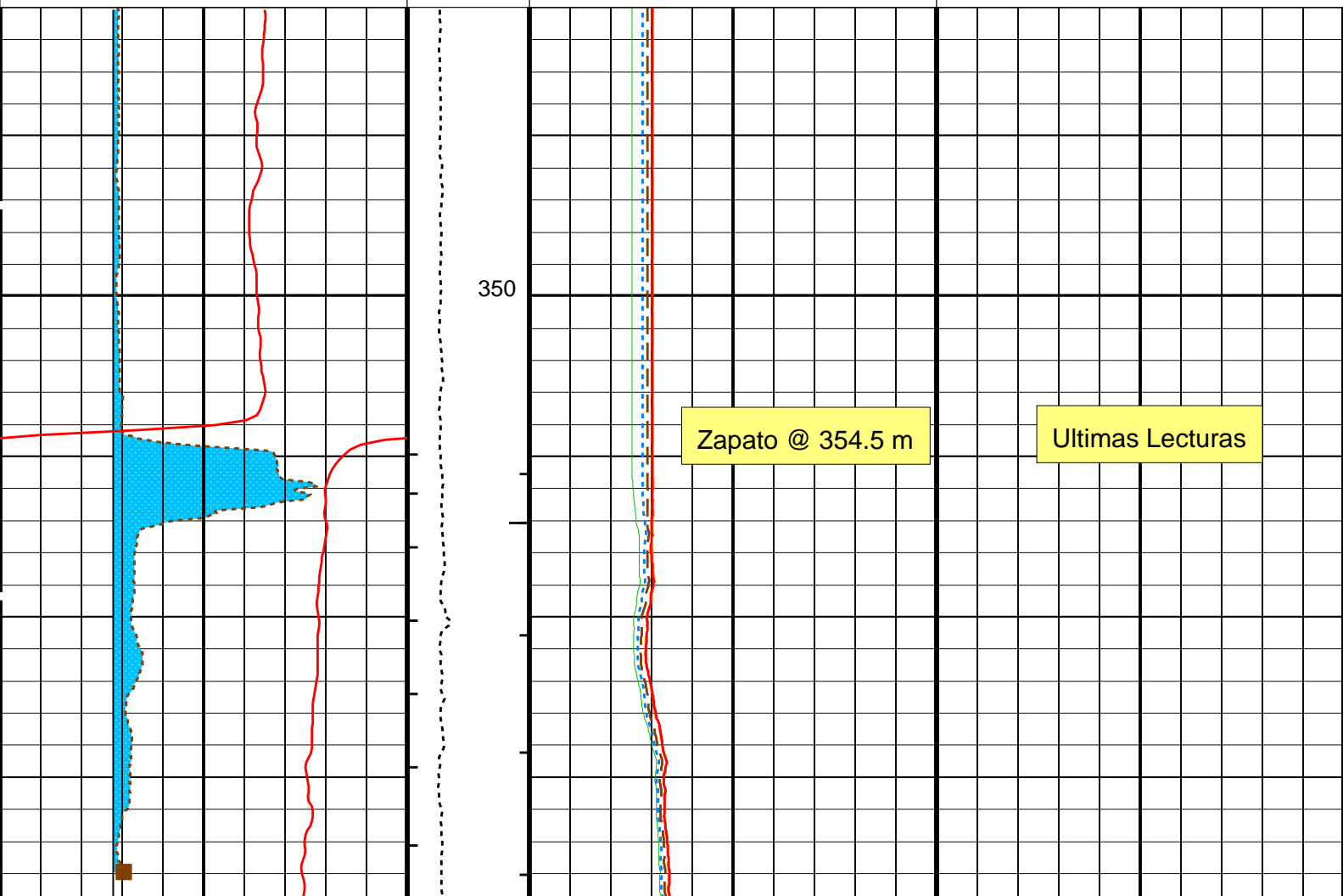
Computed from 1252.9 M to 354.6 M using data channel(s) HCAL

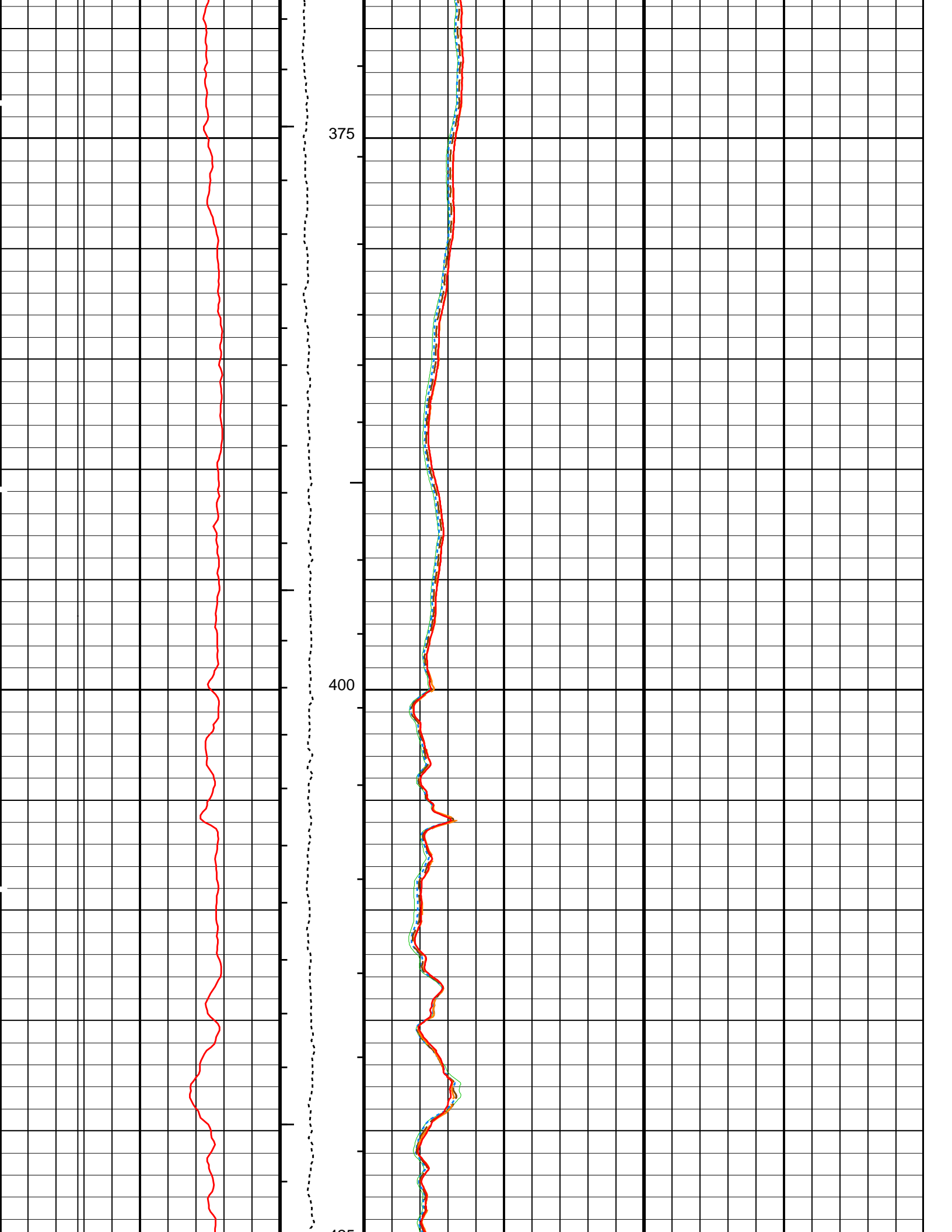
PIP SUMMARY

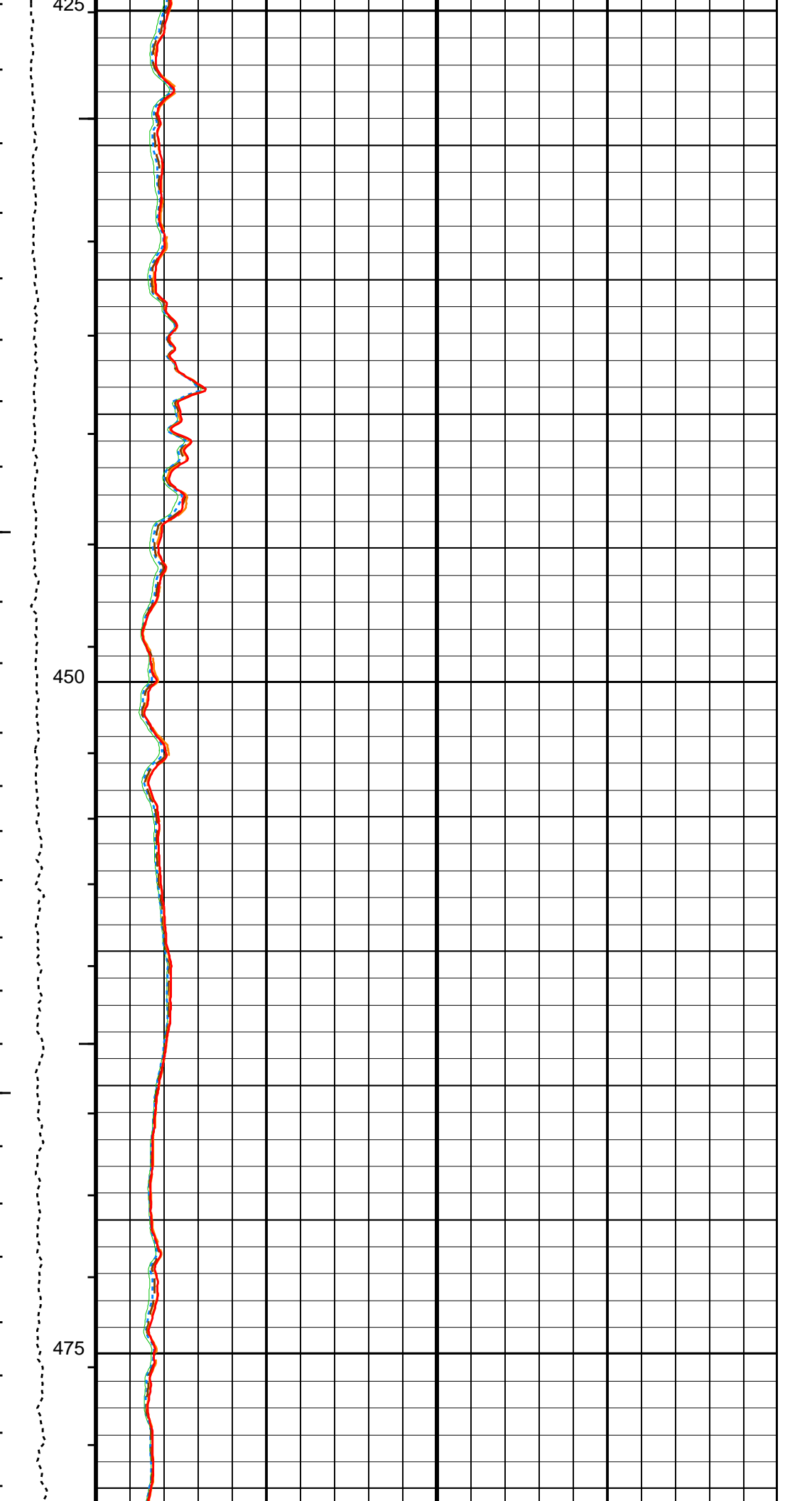
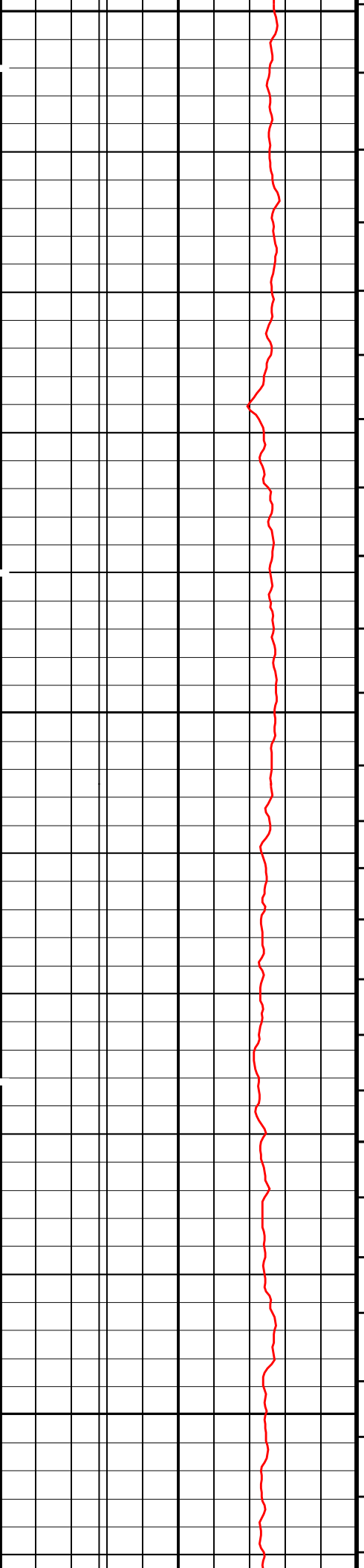
- ┆ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┆ Integrated Hole Volume Major Pip Every 1 M3
- ┆ Integrated Cement Volume Minor Pip Every 0.1 M3
- ┆ Integrated Cement Volume Major Pip Every 1 M3

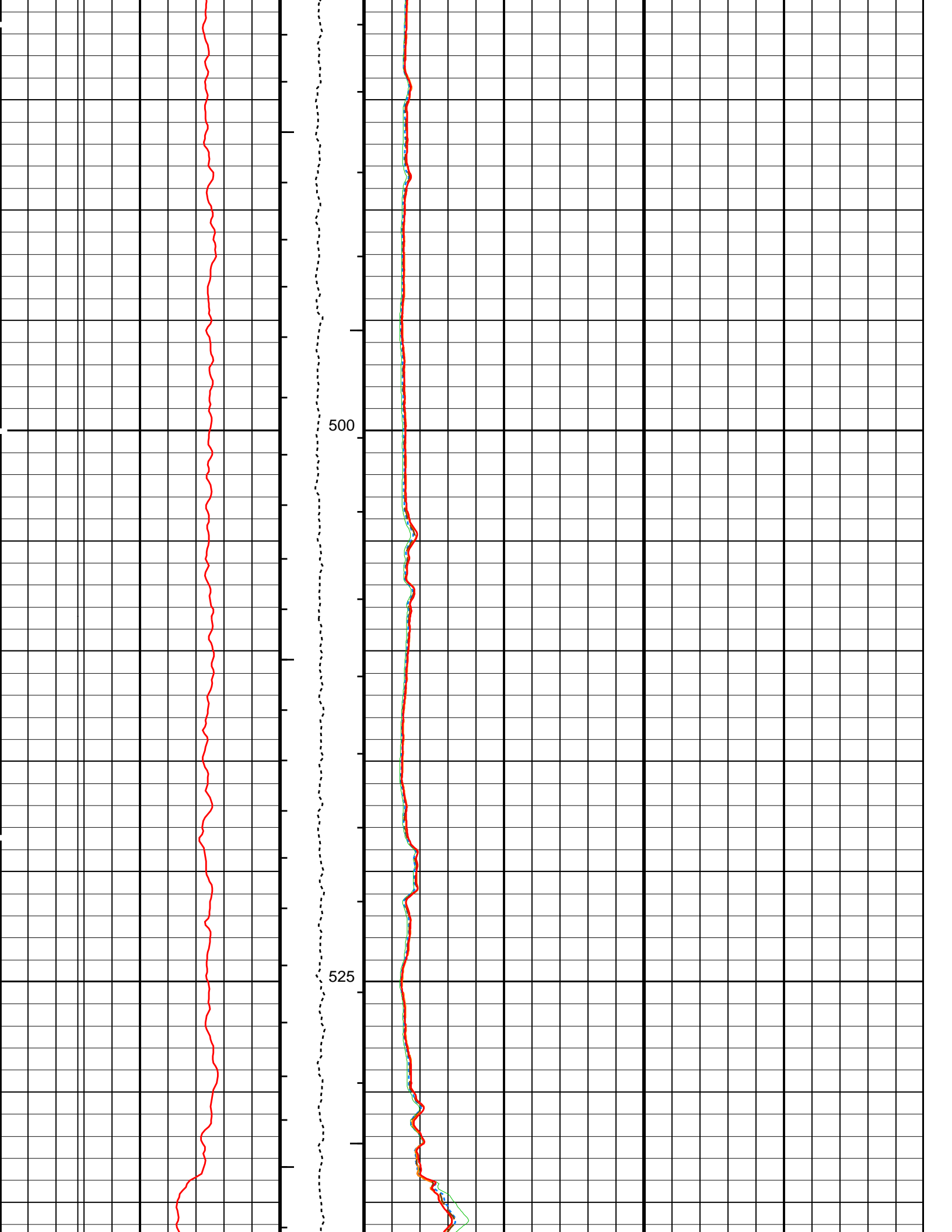
Time Mark Every 60 S

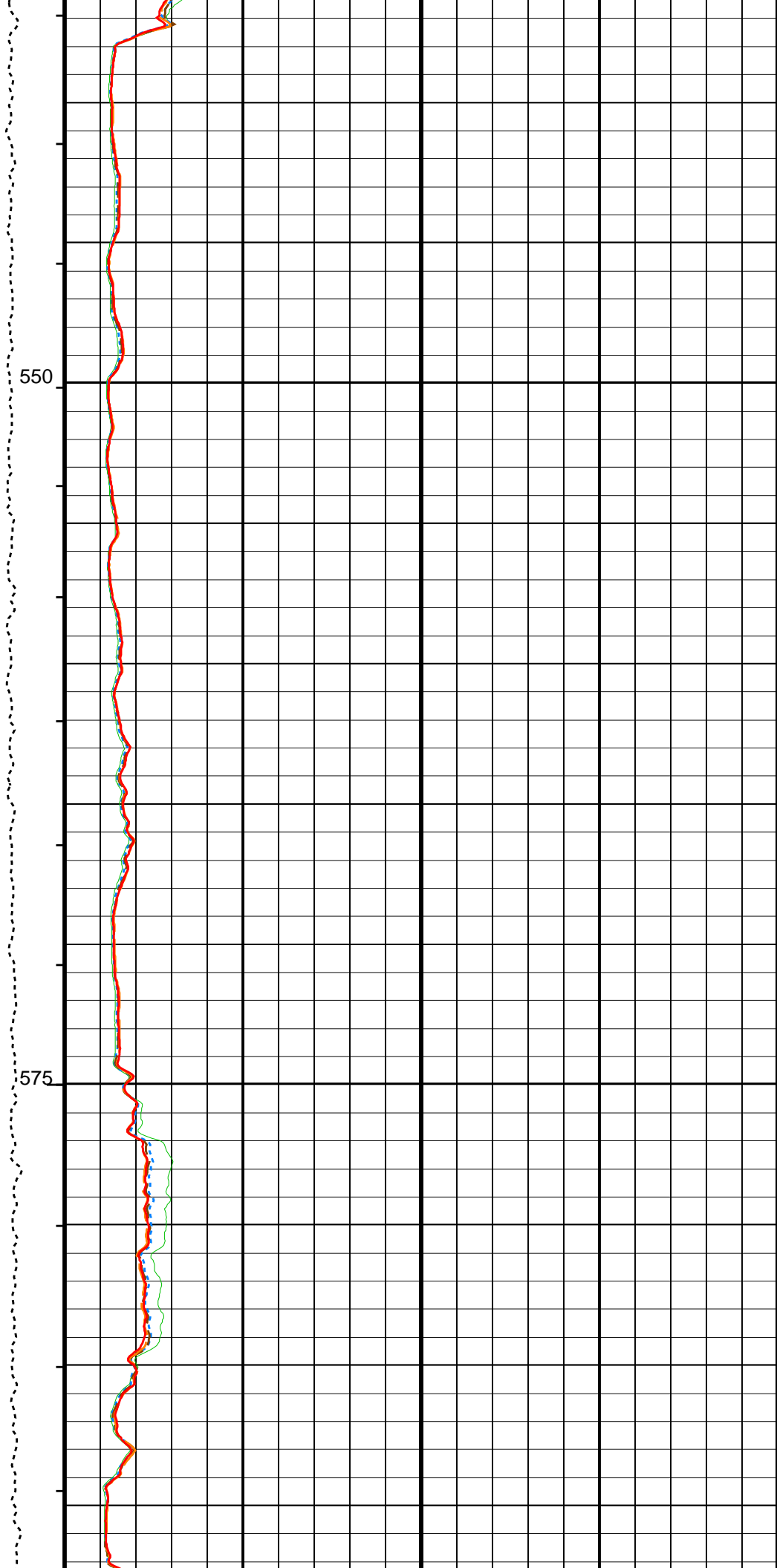
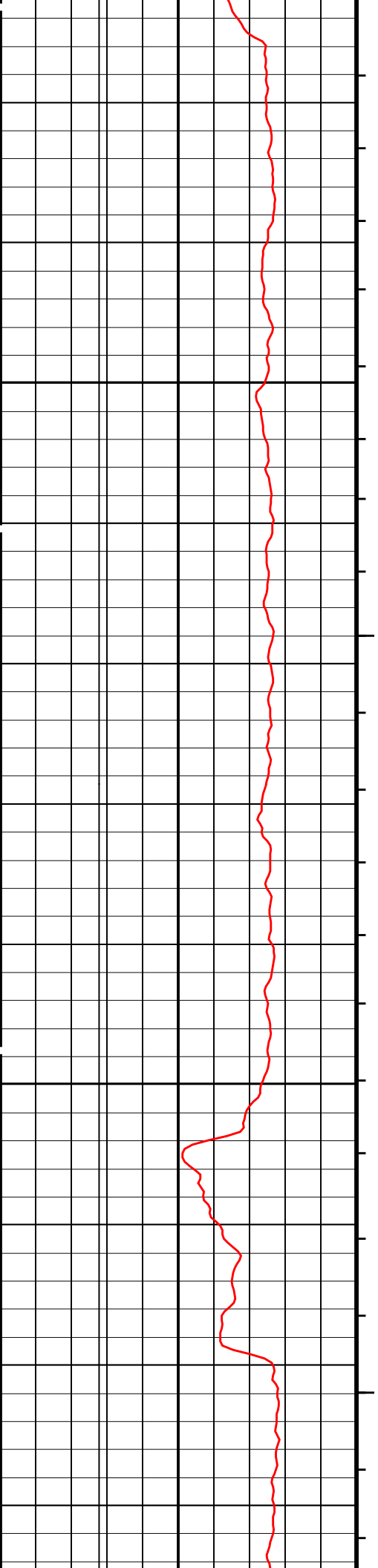
CAVERNA From BS to HCAL				Gas From DPHZ to TNPH	
REVOQUE From HCAL to BS					
-80	<u>SP (SP)</u> (MV)	20	0	<u>AIT-H 90 Inch Investigation (AHT90)</u> (OHMM)	10
0	<u>RWA (RWA)</u> (OHMM)	1	0	<u>AIT-H 60 Inch Investigation (AHT60)</u> (OHMM)	10
0	<u>Std. Res. Formation Pe (PEFZ)</u> (----	5	0	<u>AIT-H 30 Inch Investigation (AHT30)</u> (OHMM)	10
6	<u>Caliper (HCAL)</u> (IN)	16	0	<u>AIT-H 20 Inch Investigation (AHT20)</u> (OHMM)	10
		Stuck Stretch (STIT) (M)	0	0.4	<u>Env.Corr.Thermal Neutron Porosity (TNPH)</u> (V/V)
		Tension (TENS) (LBF)	0	10	<u>Std. Res. Density Porosity (DPHZ)</u> (V/V)
6	<u>Bit Size (BS)</u> (IN)	16	0	1000	0

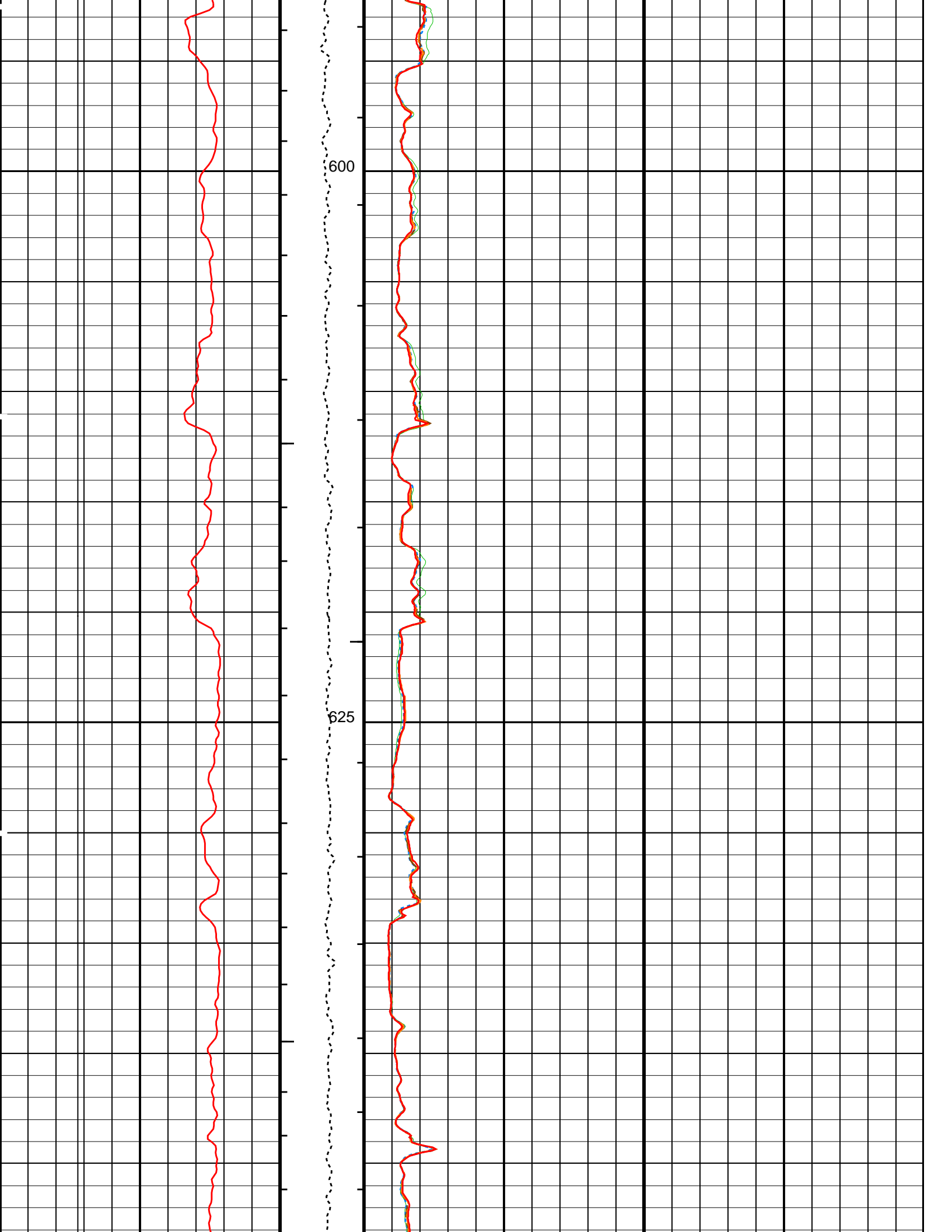


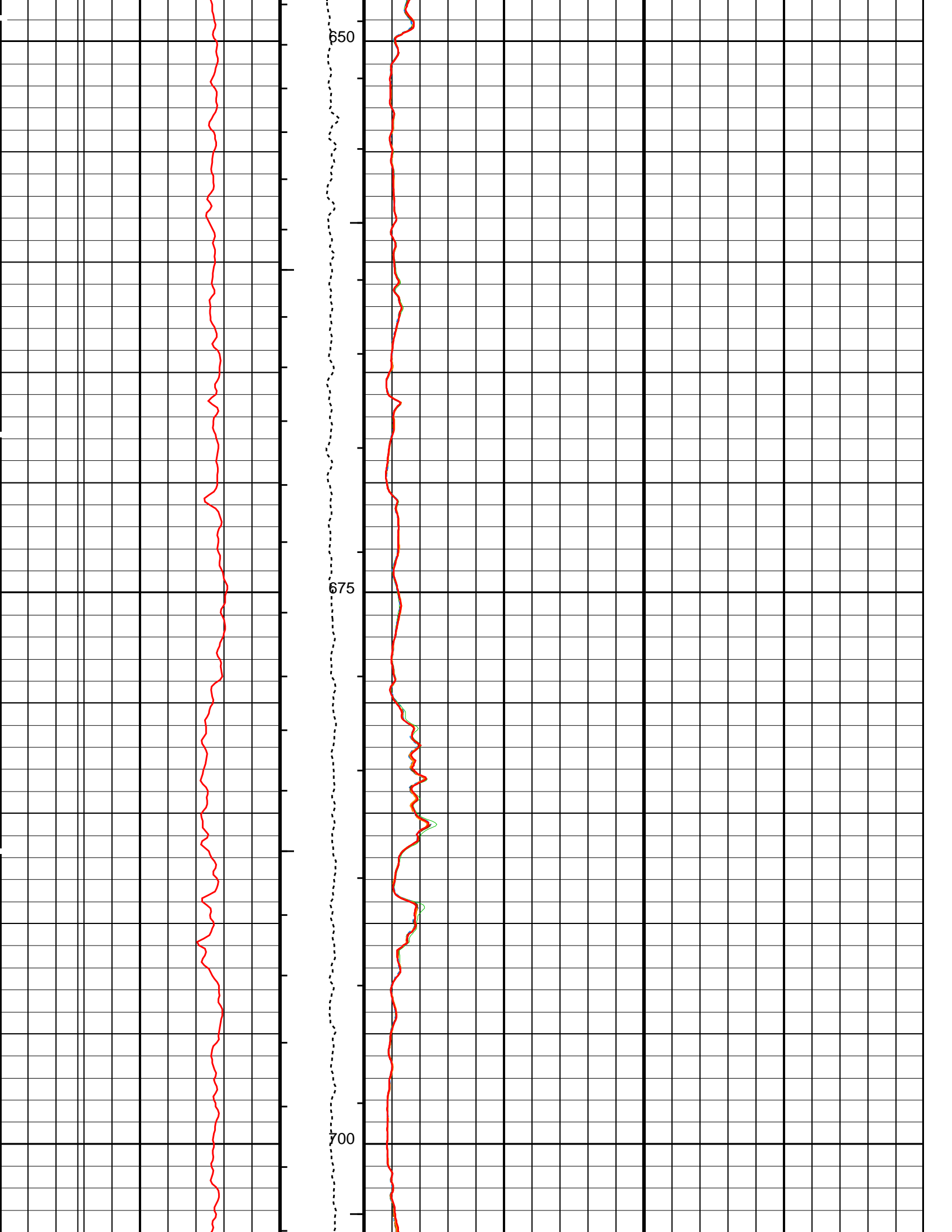


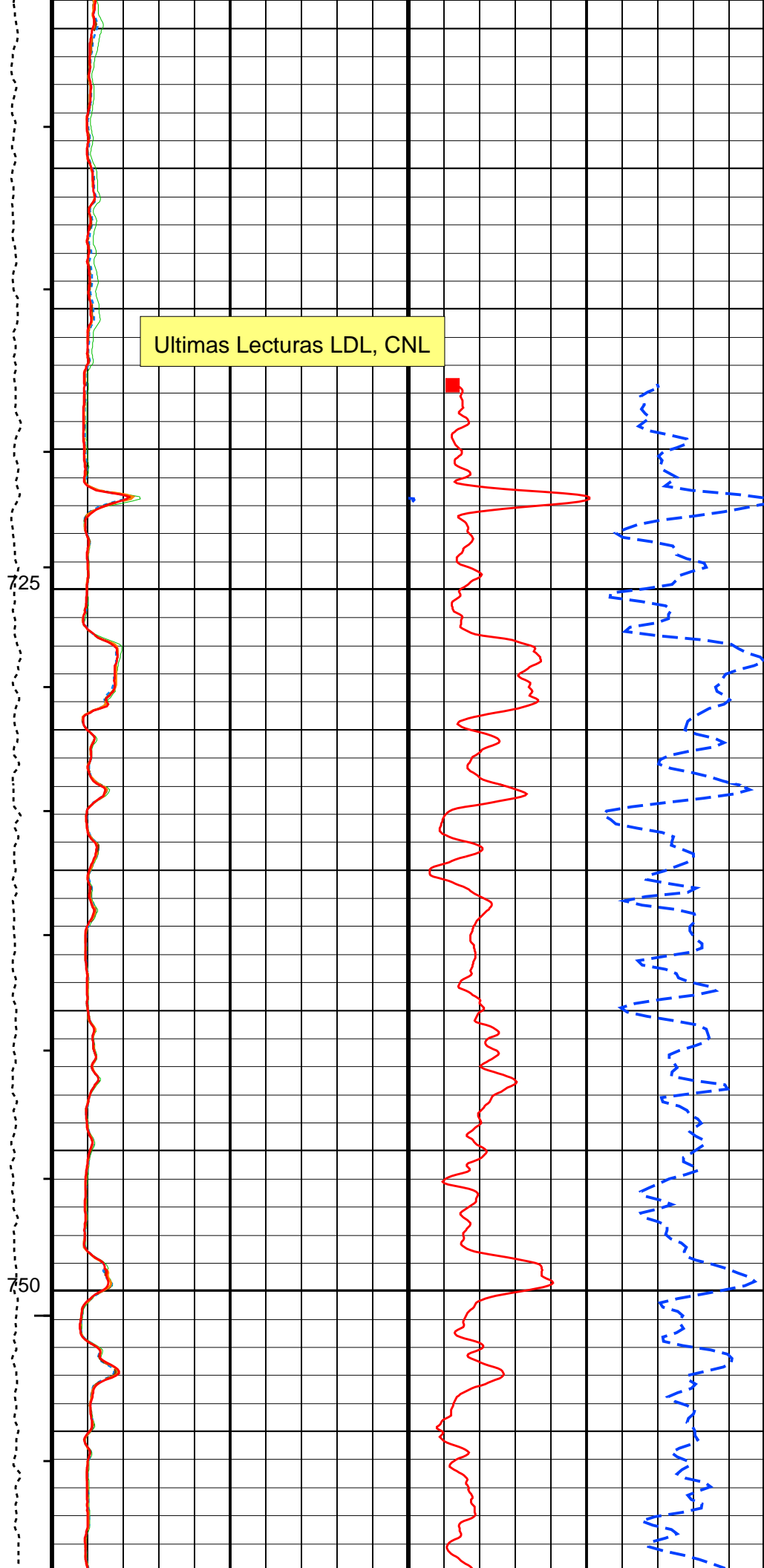
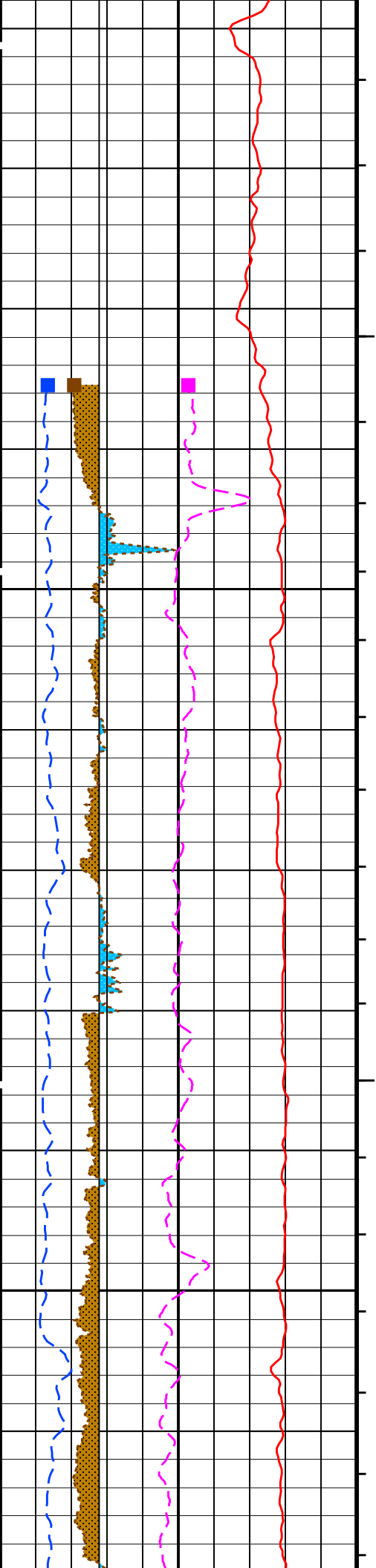


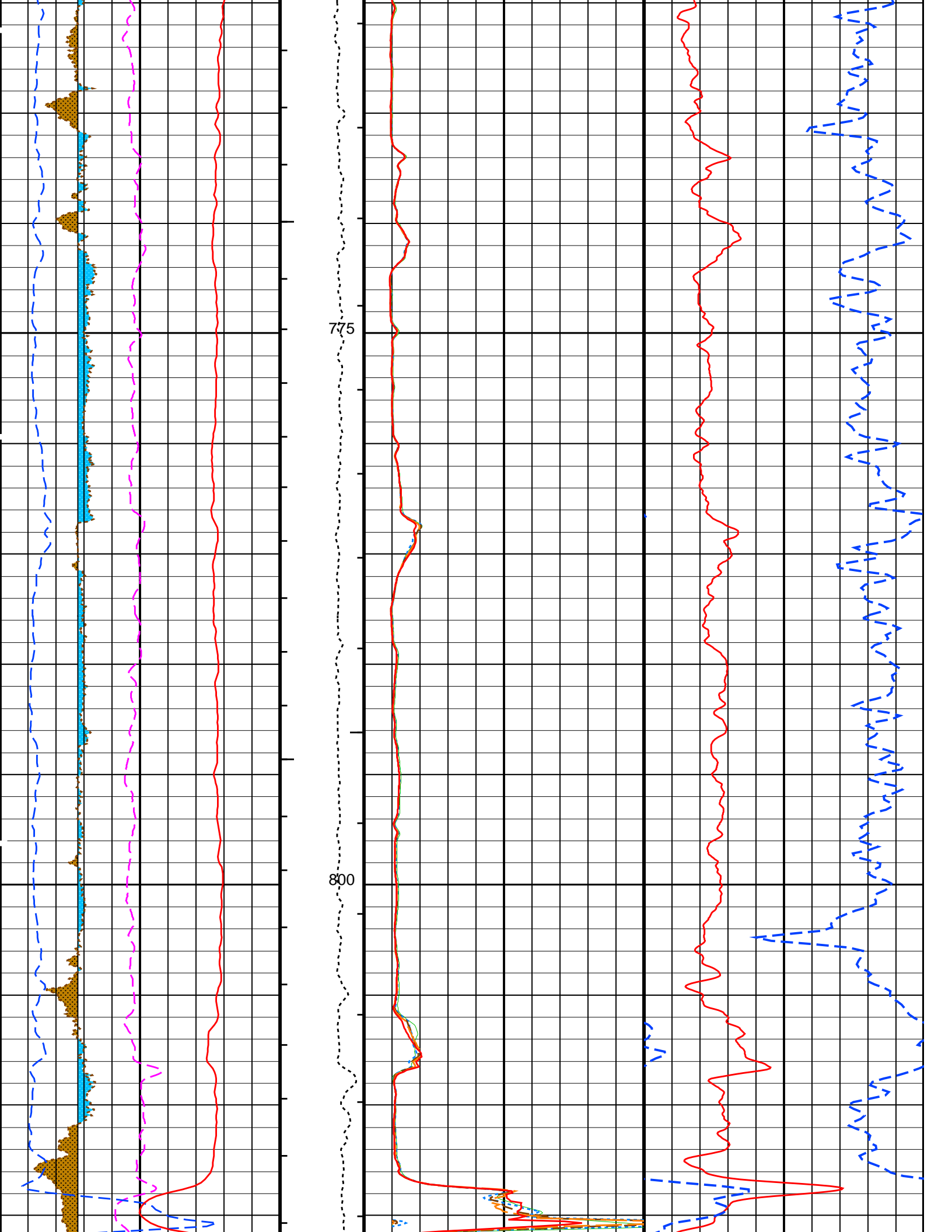


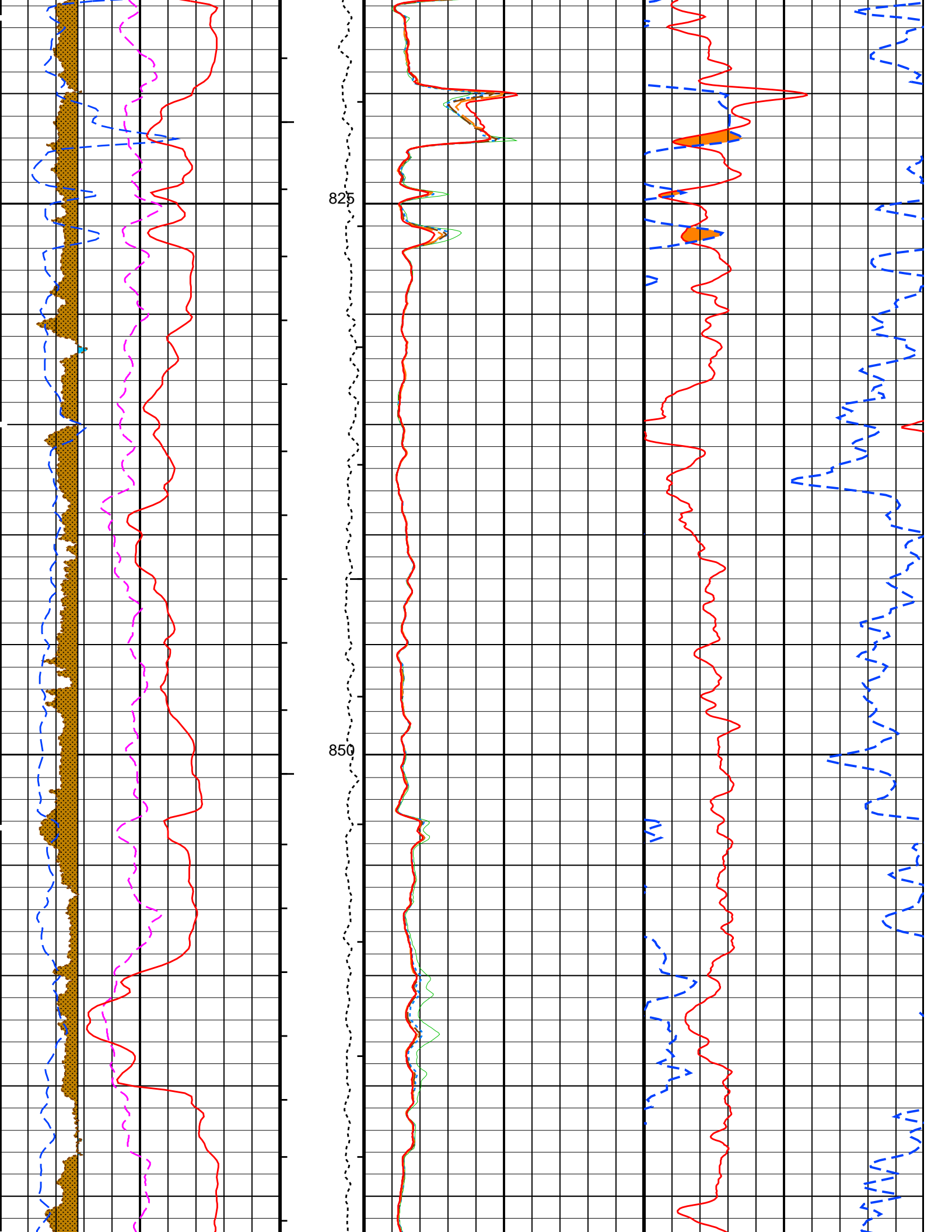


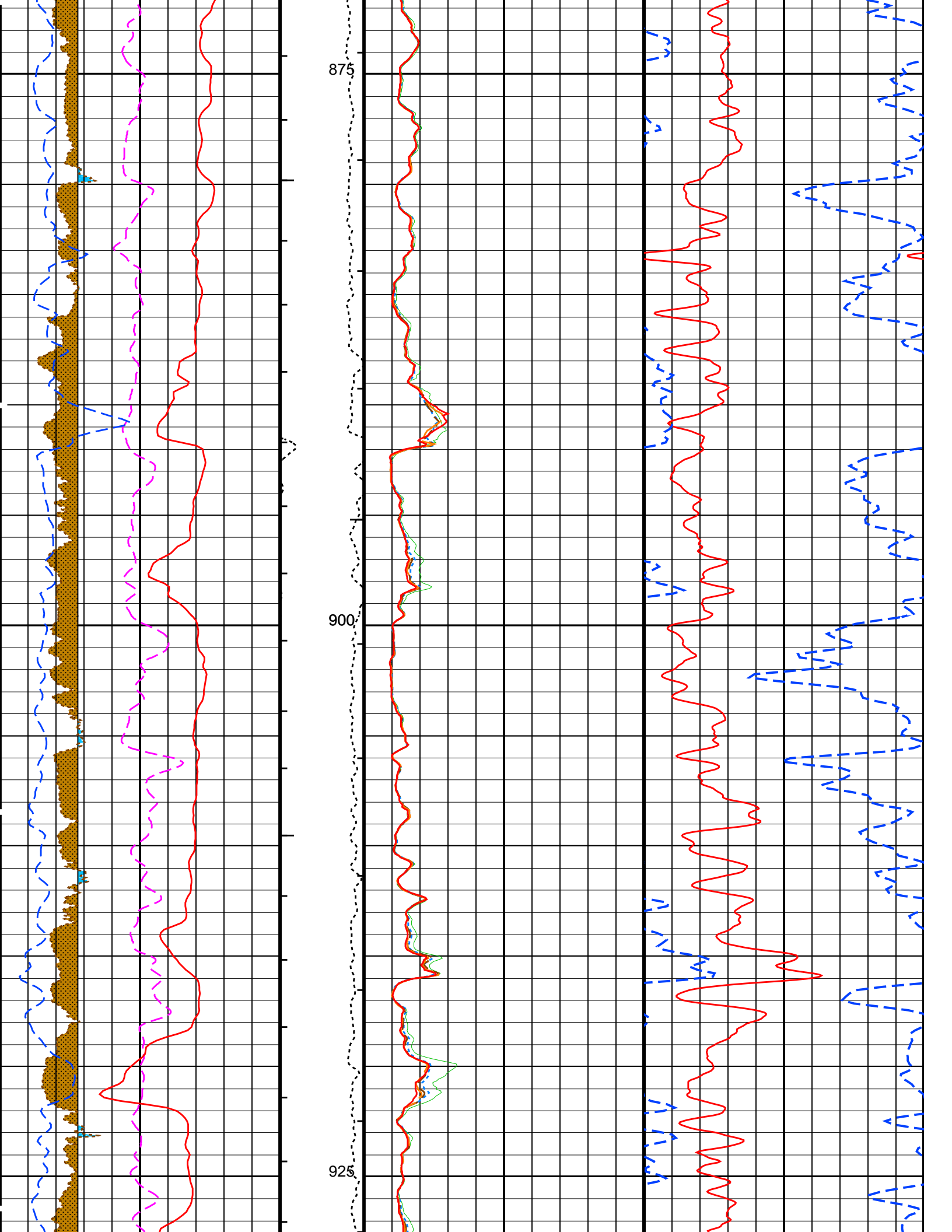


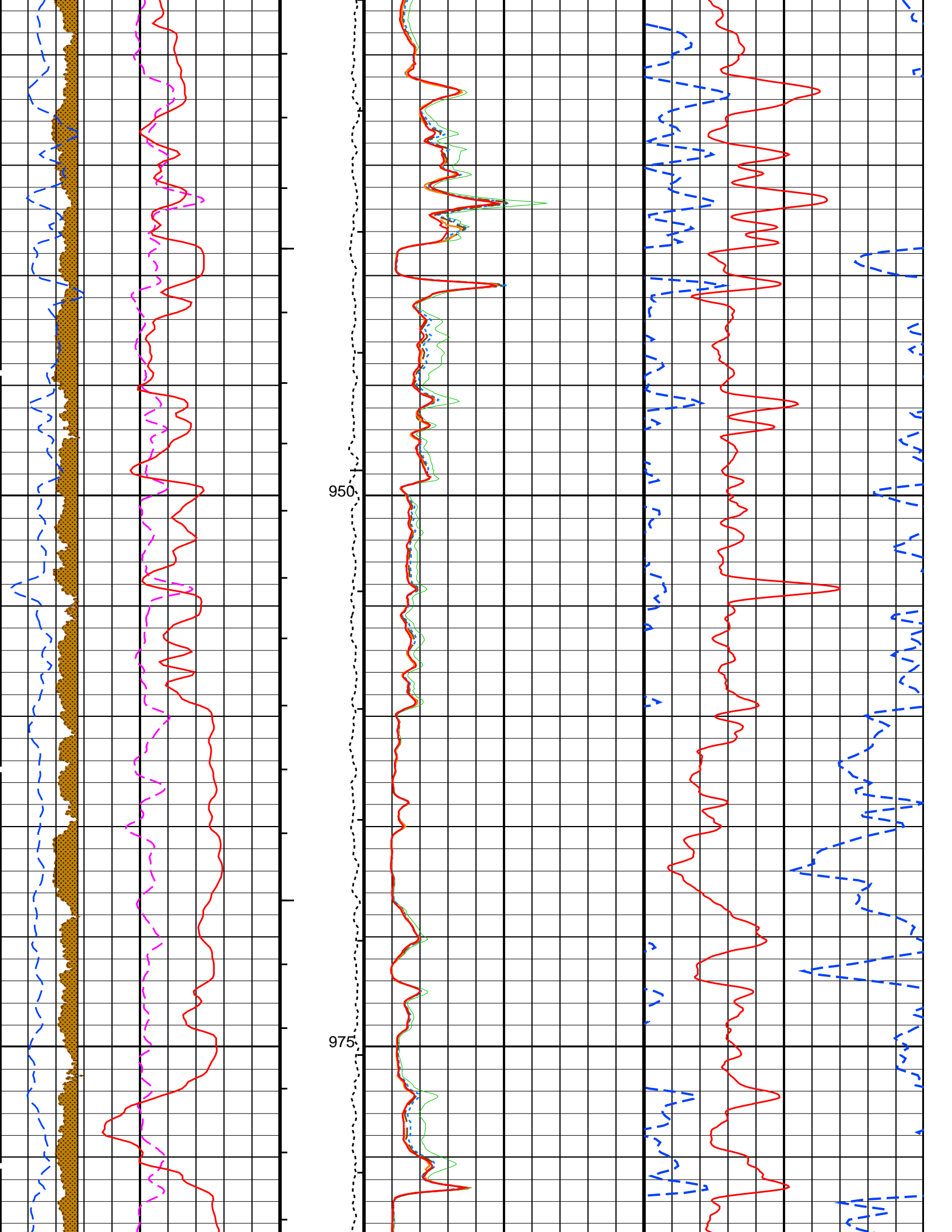


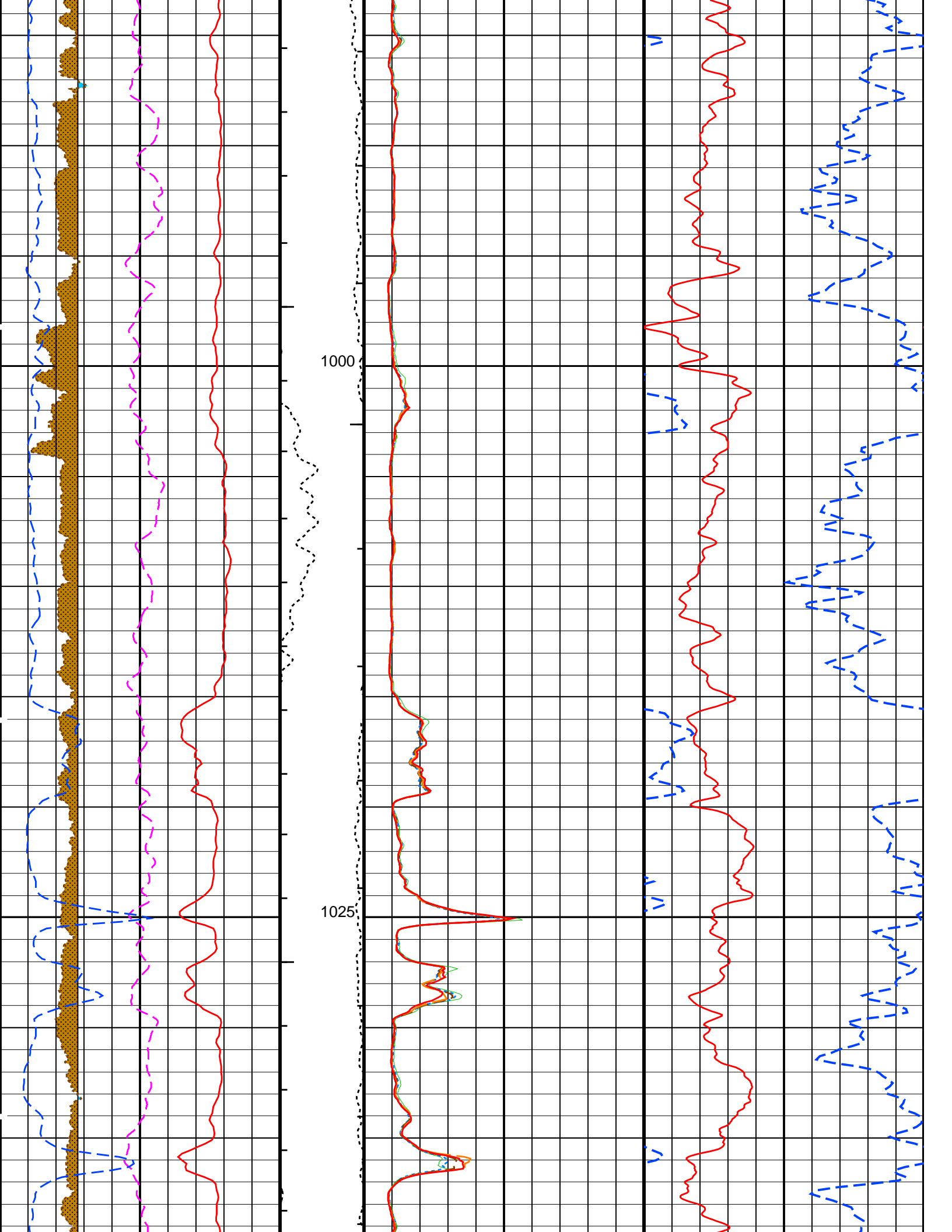


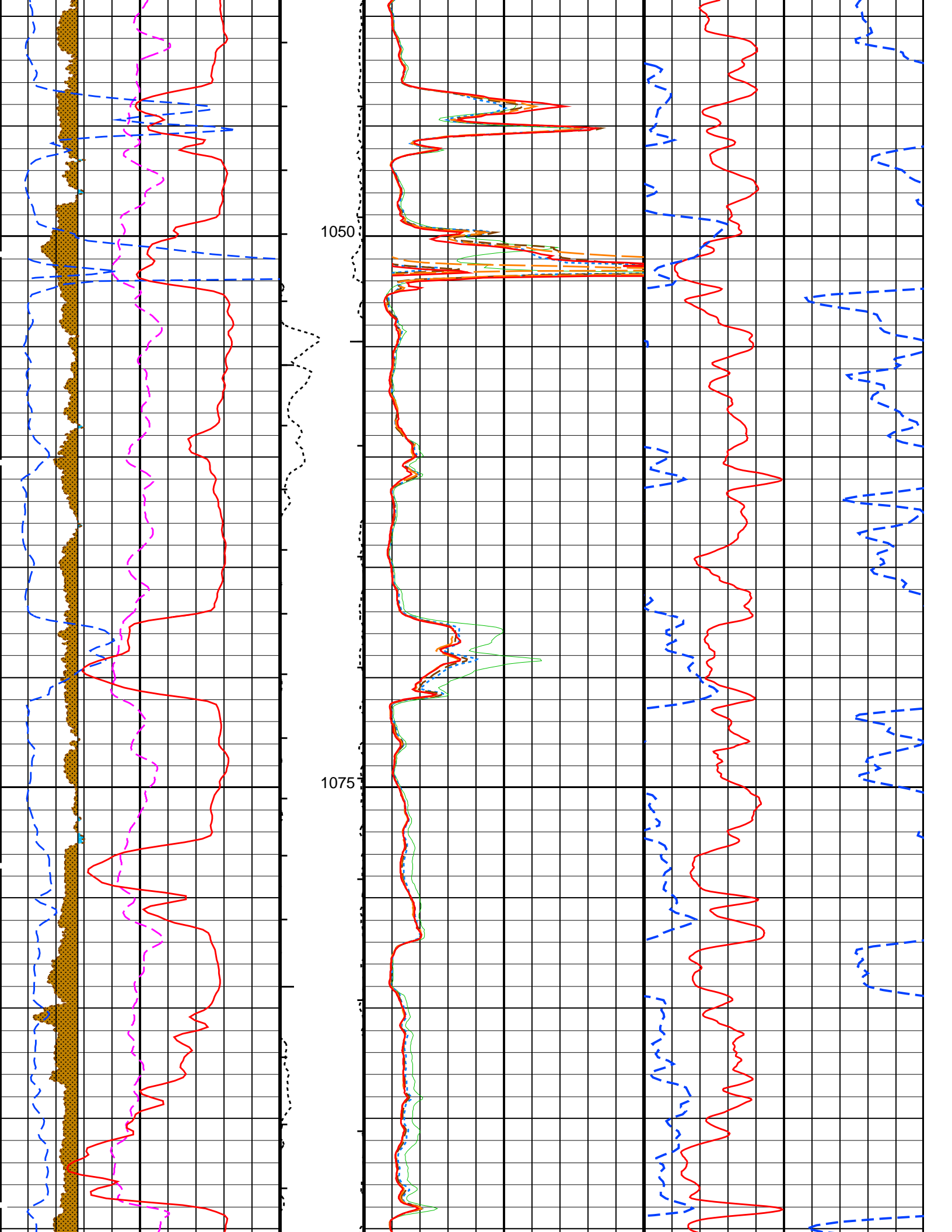


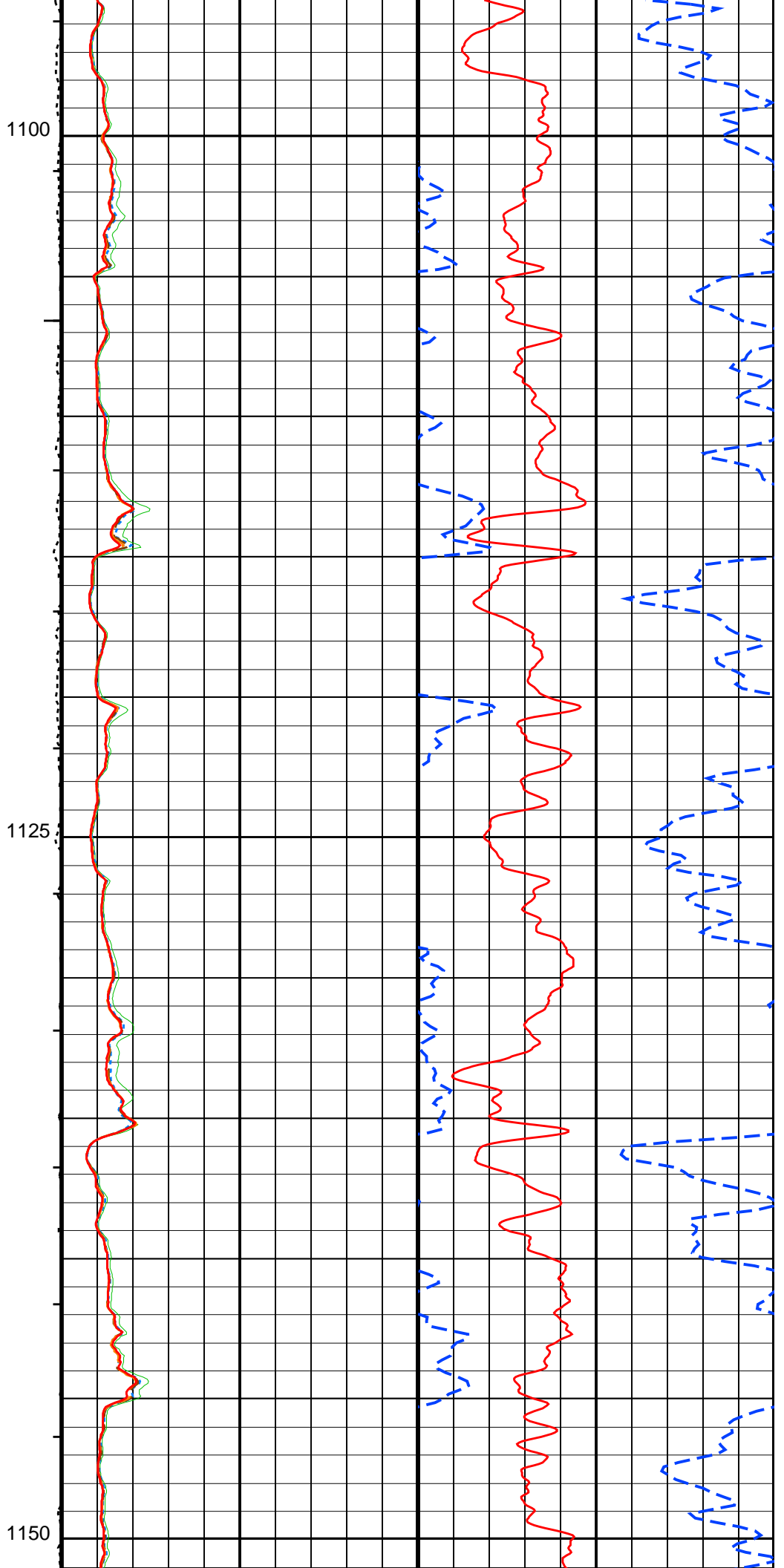
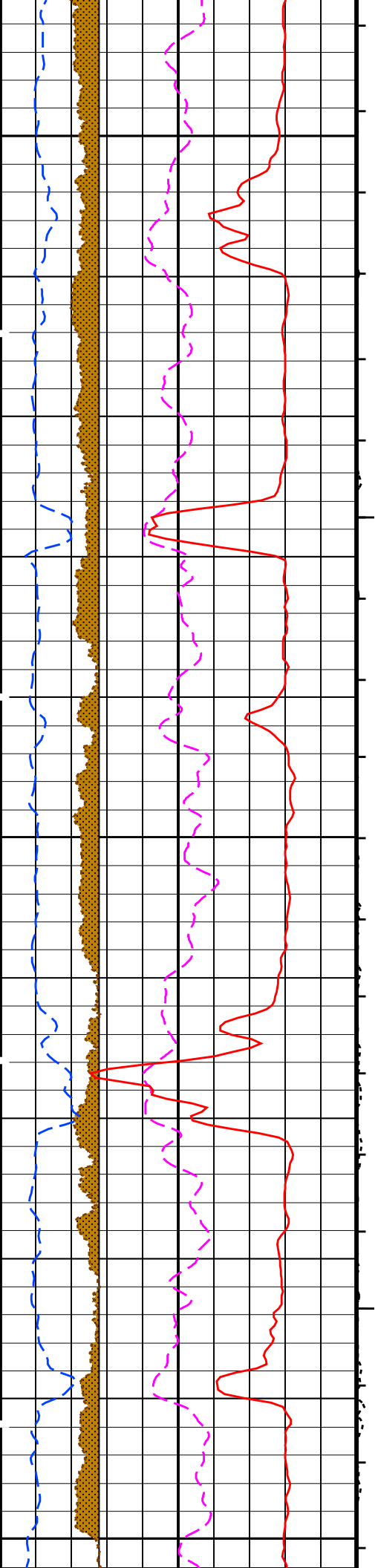


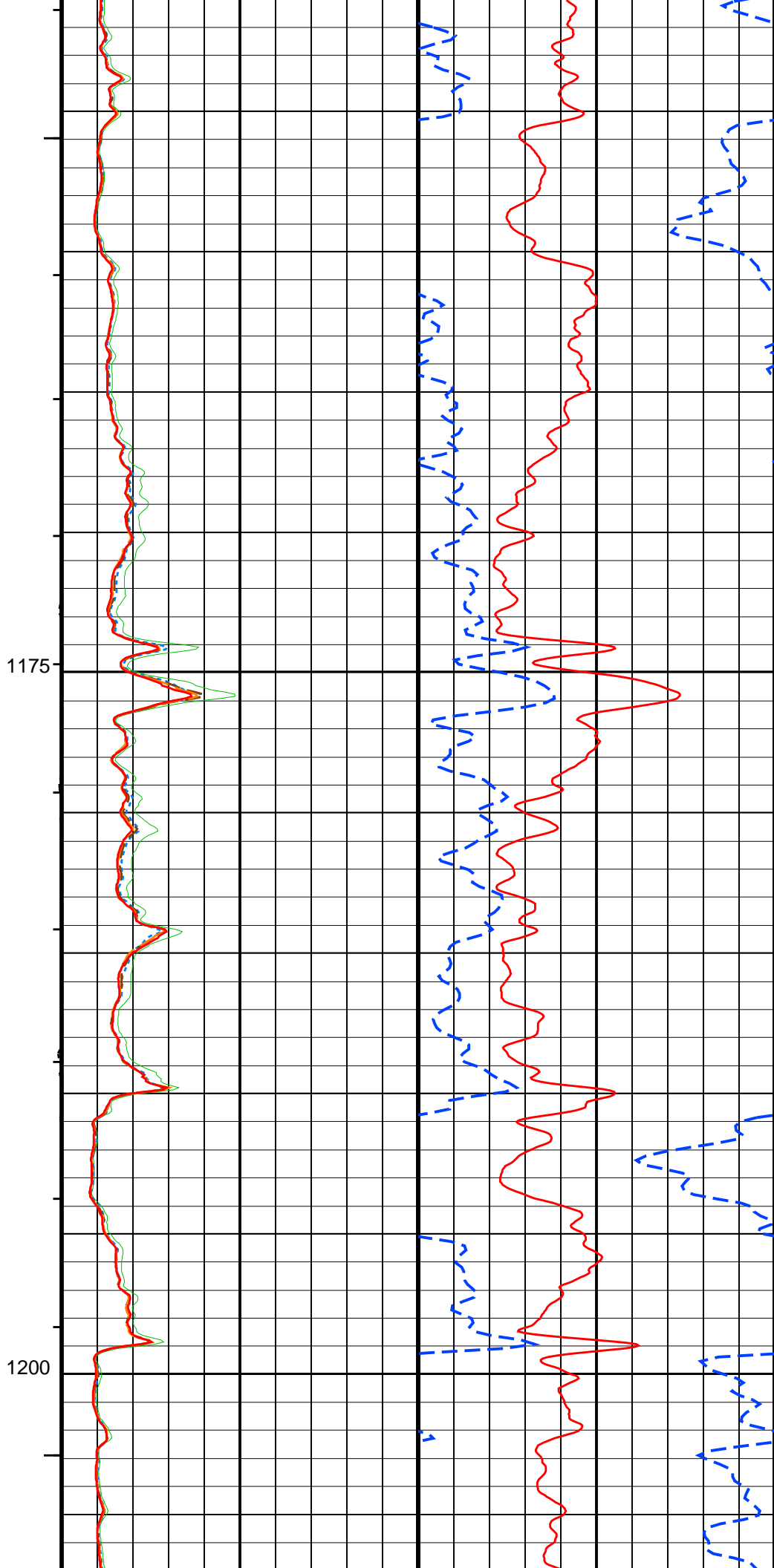
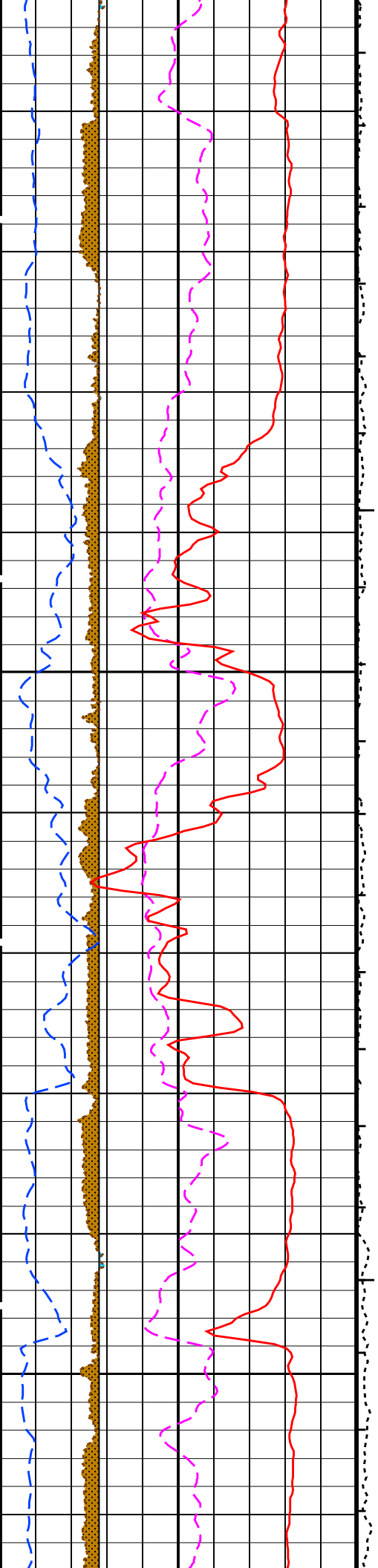


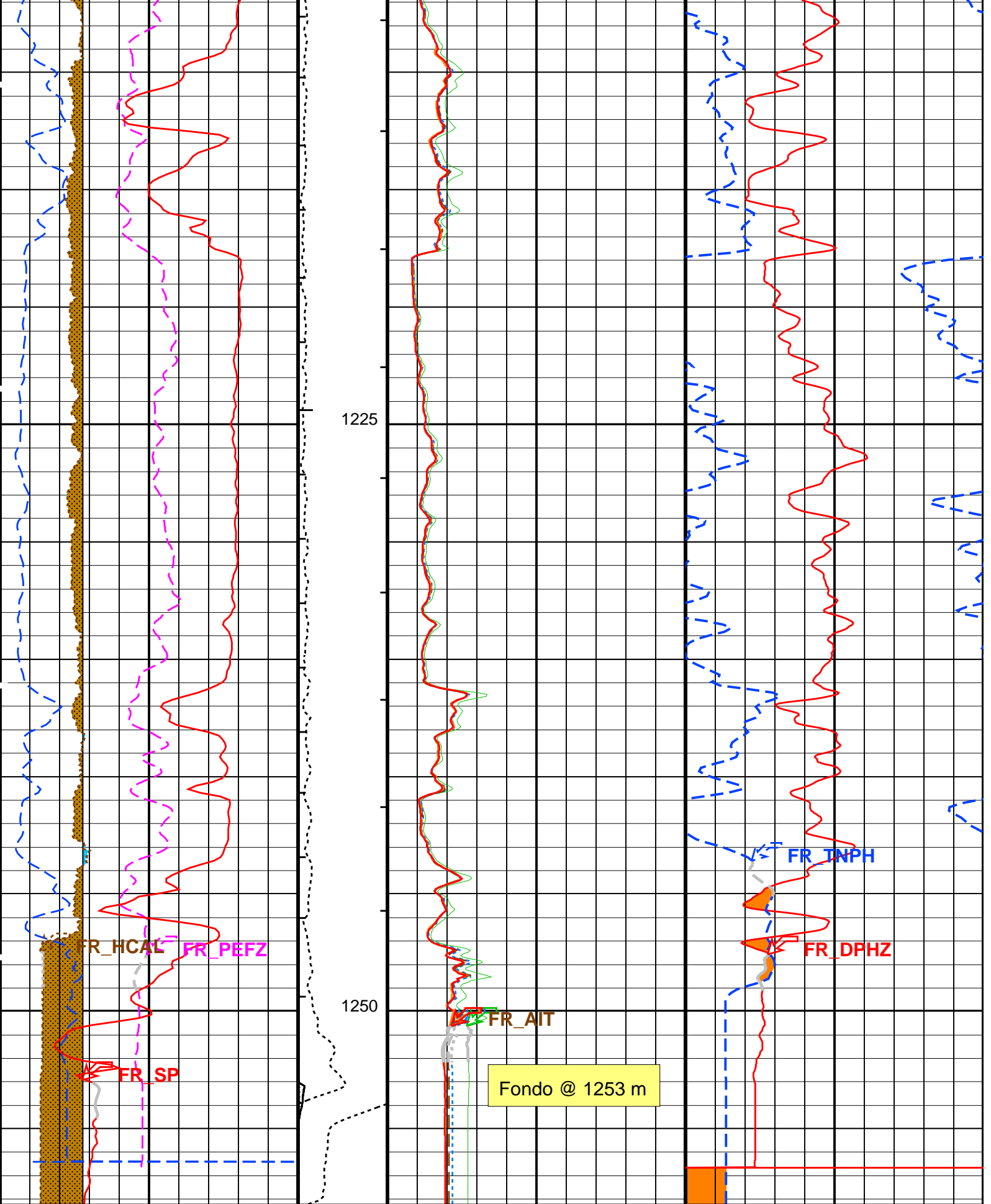












<p>Bit Size (BS) (IN)</p> <p>6 16</p>	<p>Tension (TENS) (LBF)</p> <p>0 1000</p> <p>Stuck</p>	<p>AIT-H 10 Inch Investigation (AHT10) (OHMM)</p> <p>0 10</p>	<p>Std. Res. Density Porosity (DPHZ) (V/V)</p> <p>0.4 0</p> <p>Env. Corr Thermal Neutron Porosity</p>
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6	Caliper (HCAL) (IN)	16	Stretch (STIT)	0	AIT-H 20 Inch Investigation (AHT20) (OHMM)	10	Env. Corr. Thermal Neutron Porosity (TNPH) (V/V)	0.4	0
0	Std. Res. Formation Pe (PEFZ) (----	5	0 (M) 20	0	AIT-H 30 Inch Investigation (AHT30) (OHMM)	10	Gas From DPHZ to TNPH		
0	RWA (RWA) (OHMM)	1		0	AIT-H 60 Inch Investigation (AHT60) (OHMM)	10			
-80	SP (SP) (MV)	20		0	AIT-H 90 Inch Investigation (AHT90) (OHMM)	10			
REVOQUE From HCAL to BS									
CAVERNA From BS to HCAL									

PIP SUMMARY

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

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HILTB-FTB: High resolution Integrated Logging Tool-DTS		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
AHBHV	Array Induction Borehole Correction Code Version Number	900
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHBLV	Array Induction Basic Logs Code Version Number	223
AHCDE	Array Induction Casing Detection Enable	Yes
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20
AHMRF	Array Induction Mud Resistivity Factor	1
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20
AHRFV	Array Induction Radial Profiling Code Version Number	701
AHRPV	Array Induction Radial Parametrization Code Version Number	232
AHSTA	Array Induction Tool Standoff	1.5
ARTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20
AHRS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90
BHFL	Borehole Fluid Type	WATER
BHFL_TLD	HILT Nuclear Mud Base	WATER
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	49
BSCO	Borehole Salinity Correction Option	YES
CCCO	Casing & Cement Thickness Correction Option	NO
DHC	Density Hole Correction	BS
FD	Fluid Density	1
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	0.81
FPHI	Form Factor Porosity Source	DPHZ
FSAL	Formation Salinity	-50000
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
GGRD	Geothermal Gradient	0.018227
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
HSCO	Hole Size Correction Option	YES
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
MCCO	Mud Cake Correction Option	YES
MCOR	Mud Correction	NATU
MDEN	Matrix Density	2.65
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
PTCO	Pressure/Temperature Correction Option	YES
RTCO	STCO - Rt Invasion Correction	YES
SDAT	Standoff Data Source	SOCN
SHT	Surface Hole Temperature	20

SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
SPNV	SP Next Value	-52	MV
RWA: Apparent Water Resistivity			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	49	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	DPHZ	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
RTCO	RTCO - Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	20	DEGC
ALLRES: Basic Resistivity Transforms			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
RTCO	RTCO - Rt Invasion Correction	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	49	DEGC
FCD	Future Casing (Outer) Diameter	5.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	STI	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	1250.00	M
TDL	Total Depth - Logger	1253.00	M
System and Miscellaneous			
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	300.00	PPM
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	NORMAL	
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1253	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA Vertical Scale: 1:200 Graphics File Created: 15-Sep-2007 17:04

OP System Version: 15C0-309
MCM

HILTB-FTB SRPC-3402-Q3_2007 DTC-H 15C0-309

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_006LUP	FN:9	PRODUCER	15-Sep-2007 15:33	1258.2 M	235.2 M
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:8	PRODUCER	15-Sep-2007 17:03		
CUSTOMER	AIT_TLD_MCFL_CNL_039PUC	FN:9	CUSTOMER	15-Sep-2007 17:03		



TRAMO REPETIDO

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_005LUP FN:7 PRODUCER 15-Sep-2007 15:33 1256.4 M 1087.8 M

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_042PUP FN:14 PRODUCER 15-Sep-2007 17:15 1189.9 M 1120.9 M
 CUSTOMER AIT_TLD_MCFL_CNL_042PUC FN:15 CUSTOMER 15-Sep-2007 17:15 1189.9 M 1120.9 M

Integrated Hole/Cement Volume Summary

Hole Volume = 2.50 M3
 Cement Volume = 1.44 M3 (assuming 5.50 IN casing O.D.)
 Computed from 1189.9 M to 1121.1 M using data channel(s) HCAL

OP System Version: 15C0-309

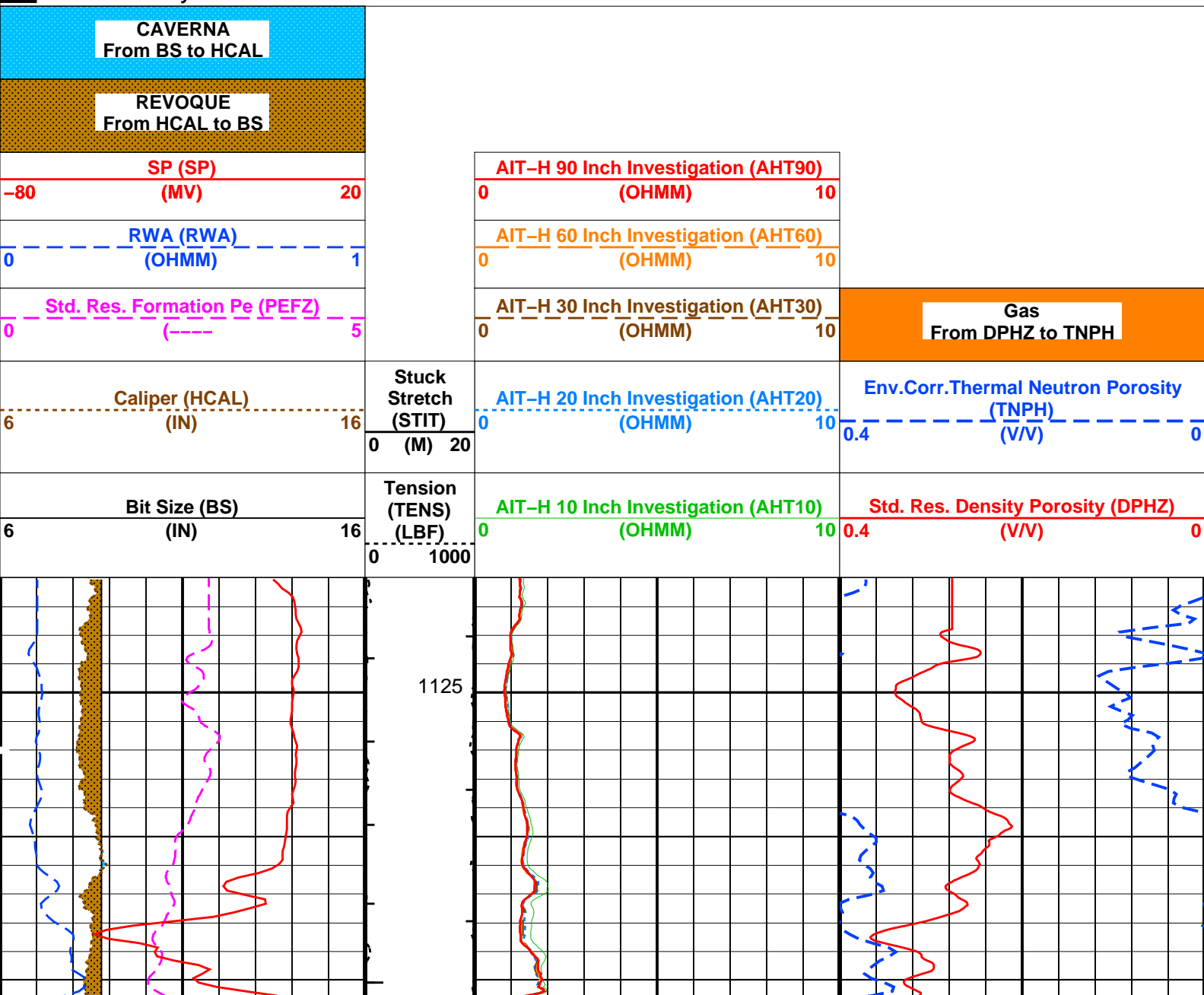
MCM

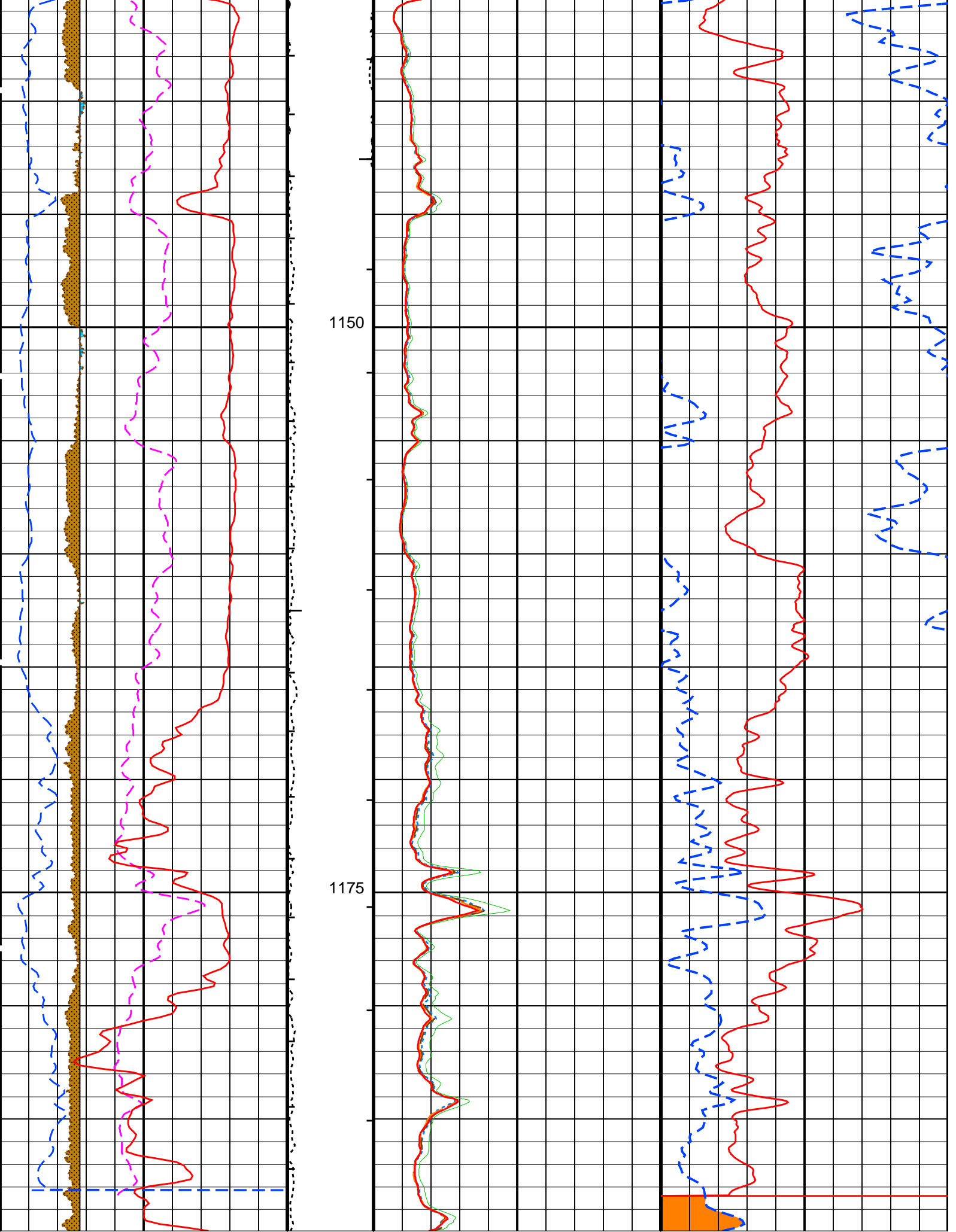
HILTB-FTB SRPC-3402-Q3_2007 DTC-H 15C0-309

PIP SUMMARY

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

Time Mark Every 60 S





6	(IN)	16	0	1000	0	(OHMM)	10	0.4	(V/V)	0
6	Caliper (HCAL) (IN)	16	0	20	0	AIT-H 20 Inch Investigation (AHT20) (OHMM)	10	0.4	Env.Corr.Thermal Neutron Porosity (TNPH) (V/V)	0
0	Std. Res. Formation Pe (PEFZ) (----	5	0		0	AIT-H 30 Inch Investigation (AHT30) (OHMM)	10		Gas From DPHZ to TNPH	
0	RWA (RWA) (OHMM)	1	0		0	AIT-H 60 Inch Investigation (AHT60) (OHMM)	10			
-80	SP (SP) (MV)	20	0		0	AIT-H 90 Inch Investigation (AHT90) (OHMM)	10			
REVOQUE From HCAL to BS										
CAVERNA From BS to HCAL										

PIP SUMMARY

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

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HILTB-FTB: High resolution Integrated Logging Tool-DTS		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
AHBHV	Array Induction Borehole Correction Code Version Number	900
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHBLV	Array Induction Basic Logs Code Version Number	223
AHCDE	Array Induction Casing Detection Enable	Yes
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20
AHMRF	Array Induction Mud Resistivity Factor	1
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20
AHRFV	Array Induction Radial Profiling Code Version Number	701
AHRPV	Array Induction Radial Parametrization Code Version Number	232
AHSTA	Array Induction Tool Standoff	1.5 IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90
BHFL	Borehole Fluid Type	WATER
BHFL_TLD	HILT Nuclear Mud Base	WATER
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	49 DEGC
BSCO	Borehole Salinity Correction Option	YES
CCCO	Casing & Cement Thickness Correction Option	NO
DHC	Density Hole Correction	BS
FD	Fluid Density	1 G/C3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	0.81
FPHI	Form Factor Porosity Source	DPHZ
FSAL	Formation Salinity	-50000 PPM
FSCO	Formation Salinity Correction Option	NO
GCLF	Germany Coal-like Formation Option	NO
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
HSCO	Hole Size Correction Option	YES
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
MCCO	Mud Cake Correction Option	YES
MCOR	Mud Correction	NATU
MDEN	Matrix Density	2.65 G/C3
MWCO	Mud Weight Correction Option	YES
NAAC	HRDD APS Activation Correction	OFF
NMT	HILT Nuclear Mud Type	NOBARITE
NPRM	HRDD Processing Mode	StdRes
NCAP	HRDD Depth Sampling Rate	4 IN

NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	YES	
RTCO	RTCO - Rt Invasion Correction	YES	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
SPNV	SP Next Value	-5	MV
RWA: Apparent Water Resistivity			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	49	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	DPHZ	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
RTCO	RTCO - Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	20	DEGC
ALLRES: Basic Resistivity Transforms			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
RTCO	RTCO - Rt Invasion Correction	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	49	DEGC
FCD	Future Casing (Outer) Diameter	5.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	STI	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	1250.00	M
TDL	Total Depth - Logger	1253.00	M
System and Miscellaneous			
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	300.00	PPM
DO	Depth Offset for Playback	0.8	M
DORL	Depth Offset for Repeat Analysis	0.0	M
PP	Playback Processing	NORMAL	
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1253	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA Vertical Scale: 1:200 Graphics File Created: 15-Sep-2007 17:15

OP System Version: 15C0-309
MCM

HILTB-FTB SRPC-3402-Q3_2007 DTC-H 15C0-309

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_005LUP	FN:7	PRODUCER	15-Sep-2007 15:33	1256.4 M	1087.8 M
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_042PUP	FN:14	PRODUCER	15-Sep-2007 17:15		
CUSTOMER	AIT_TLD_MCFL_CNL_042PUC	FN:15	CUSTOMER	15-Sep-2007 17:15		



ANALISIS DE REPETIBILIDAD

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_005LUP	FN:7	PRODUCER	15-Sep-2007 15:33	1256.4 M	1087.8 M
DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:8	PRODUCER	15-Sep-2007 17:03	1258.2 M	340.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_042PUP	FN:14	PRODUCER	15-Sep-2007 17:15	1189.9 M	1120.9 M
CUSTOMER	AIT_TLD_MCFL_CNL_042PUC	FN:15	CUSTOMER	15-Sep-2007 17:15	1189.9 M	1120.9 M

Integrated Hole/Cement Volume Summary

Hole Volume = 2.50 M3
 Cement Volume = 1.44 M3 (assuming 5.50 IN casing O.D.)
 Computed from 1189.9 M to 1121.1 M using data channel(s) HCAL

OP System Version: 15C0-309

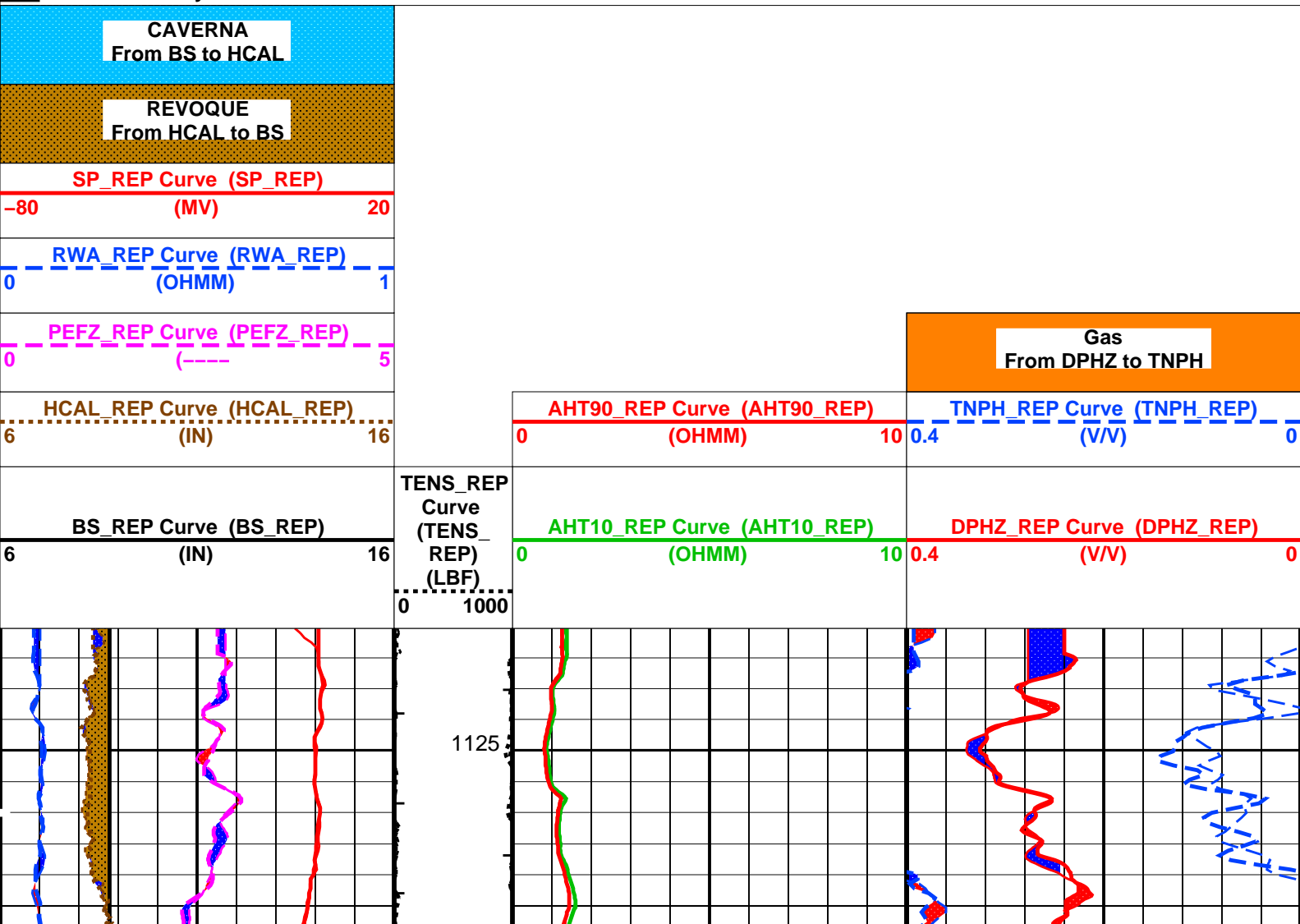
MCM

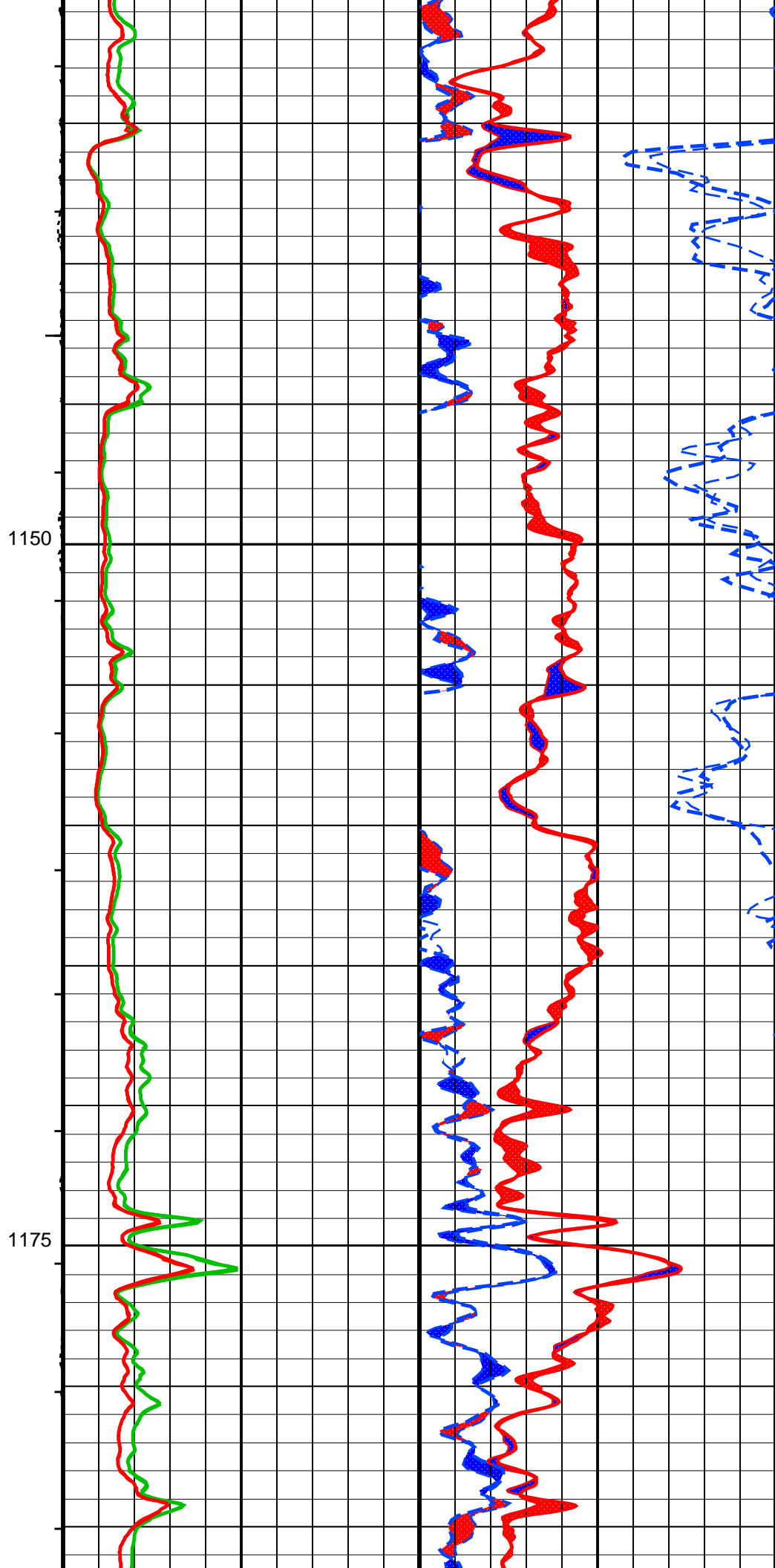
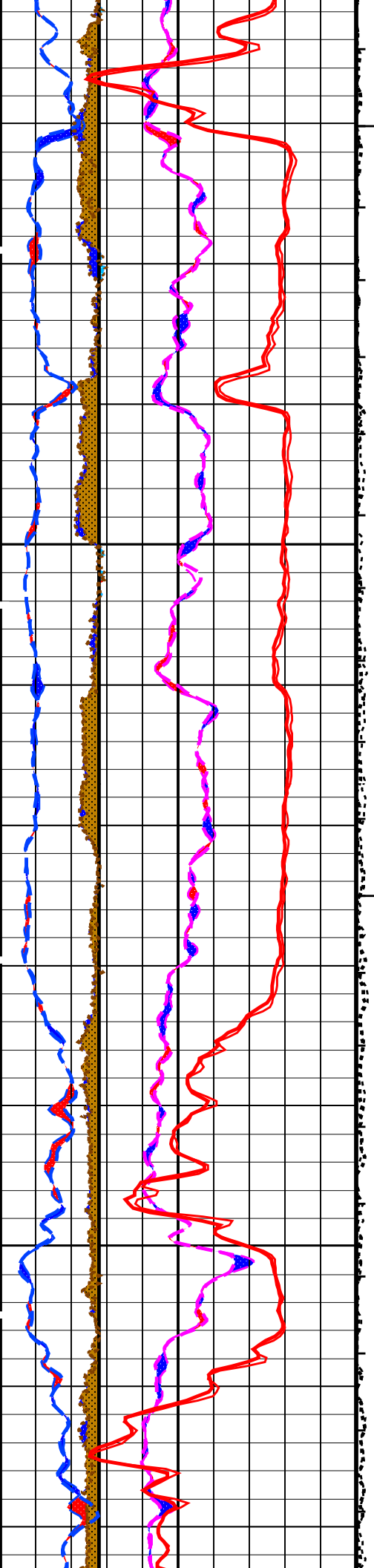
HILTB-FTB SRPC-3402-Q3_2007 DTC-H 15C0-309

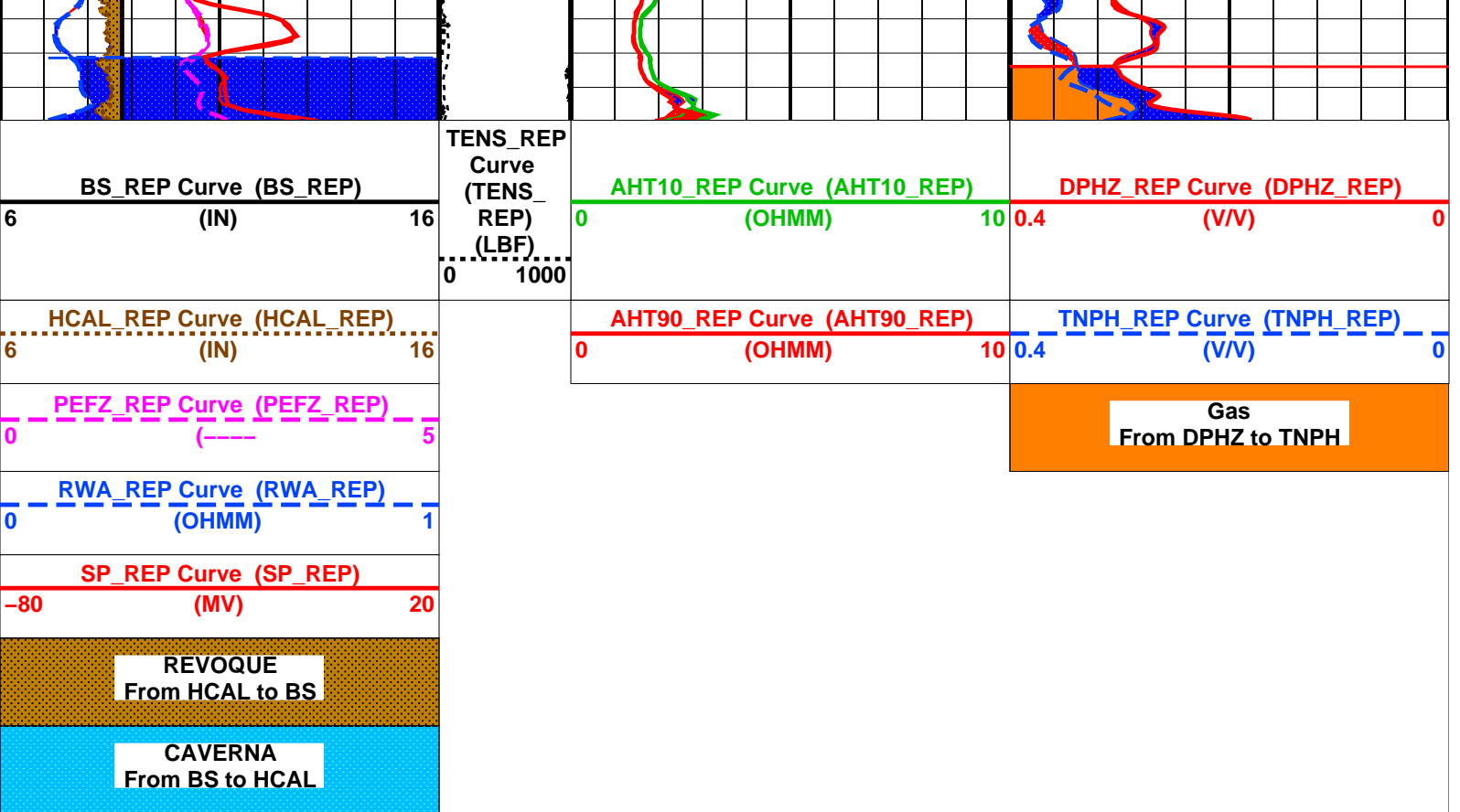
PIP SUMMARY

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

Time Mark Every 60 S







PIP SUMMARY

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

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HILTB-FTB: High resolution Integrated Logging Tool-DTS		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
AHBHV	Array Induction Borehole Correction Code Version Number	900
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHBLV	Array Induction Basic Logs Code Version Number	223
AHCDE	Array Induction Casing Detection Enable	Yes
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20
AHMRF	Array Induction Mud Resistivity Factor	1
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20
AHRFV	Array Induction Radial Profiling Code Version Number	701
AHRPV	Array Induction Radial Parametrization Code Version Number	232
AHSTA	Array Induction Tool Standoff	1.5 IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90
BHFL	Borehole Fluid Type	WATER
BHFL_TLD	HILT Nuclear Mud Base	WATER
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	49 DEGC
BSCO	Borehole Salinity Correction Option	YES
CCCO	Casing & Cement Thickness Correction Option	NO
DHC	Density Hole Correction	BS
FD	Fluid Density	1 G/C3
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	0.81
FPHI	Form Factor Porosity Source	DPHZ
FSAL	Formation Salinity	-5000 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
GGRD	Geothermal Gradient	0.018227 DEG DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
HSCO	Hole Size Correction Option	YES
MATP	Rock Matrix for Neutron Porosity Corrections	SANDSTONE

MATR	ROCK Matrix for Neutron Porosity Corrections	SANDSTONE	YES	
MCCO	Mud Cake Correction Option	NATU	2.65	G/C3
MCOR	Matrix Density		YES	
MDEN	Mud Weight Correction Option		OFF	
MWCO	HRDD APS Activation Correction	NOBARITE	StdRes	
NAAC	HILT Nuclear Mud Type		1	IN
NMT	HRDD Processing Mode		YES	
NPRM	HRDD Depth Sampling Rate		YES	
NSAR	Pressure/Temperature Correction Option		YES	
PTCO	RTCO - Rt Invasion Correction		SOCN	
RTCO	Standoff Data Source		20	DEGC
SDAT	Surface Hole Temperature		0.125	IN
SHT	Standoff Distance		YES	
SOCN	Standoff Correction Option		-5	MV
SOCO	SP Next Value			
SPNV	Resistivity			
	RWA: Apparent Water Resistivity			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90		
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)	49		DEGC
FEXP	Form Factor Exponent	2		
FNUM	Form Factor Numerator	0.81		
FPHI	Form Factor Porosity Source	DPHZ		
GCSE	Generalized Caliper Selection	HCAL		
GDEV	Average Angular Deviation of Borehole from Normal	0		DEG
GGRD	Geothermal Gradient	0.018227		DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST		
GTSE	Generalized Temperature Selection	HSTS_HTEM		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
RTCO	RTCO - Rt Invasion Correction		YES	
SHT	Surface Hole Temperature		20	DEGC
	ALLRES: Basic Resistivity Transforms			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90		
RTCO	RTCO - Rt Invasion Correction		YES	
	HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)	49		DEGC
FCD	Future Casing (Outer) Diameter	5.5		IN
GCSE	Generalized Caliper Selection	HCAL		
GDEV	Average Angular Deviation of Borehole from Normal	0		DEG
GGRD	Geothermal Gradient	0.018227		DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST		
GTSE	Generalized Temperature Selection	HSTS_HTEM		
HVCS	Integrated Hole Volume Caliper Selection	HCAL		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
SHT	Surface Hole Temperature		20	DEGC
	STI: Stuck Tool Indicator			
TDL	Total Depth - Logger		1253.00	M
	System and Miscellaneous			
BS	Bit Size		8.750	IN
BSAL	Borehole Salinity		300.00	PPM
DO	Depth Offset for Playback		0.8	M
DORL	Depth Offset for Repeat Analysis		0.0	M
PP	Playback Processing		NORMAL	
RW	Resistivity of Connate Water		1.0000	OHMM
TD	Total Depth		1253	M
TWS	Temperature of Connate Water Sample		37.78	DEGC

Format: COMBINADA_REP Vertical Scale: 1:200 Graphics File Created: 15-Sep-2007 17:15

OP System Version: 15C0-309

MCM

HILTB-FTB

SRPC-3402-Q3_2007

DTC-H

15C0-309

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_005LUP	FN:7	PRODUCER	15-Sep-2007 15:33	1256.4 M	1087.8 M
DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:8	PRODUCER	15-Sep-2007 17:03	1258.2 M	340.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_042PUP	FN:14	PRODUCER	15-Sep-2007 17:15		
CUSTOMER	AIT_TLD_MCFL_CNL_042PUC	FN:15	CUSTOMER	15-Sep-2007 17:15		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_046PUP	FN:22	PRODUCER	15-Sep-2007 17:26	365.0 M	340.9 M
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_049PUP	FN:28	PRODUCER	15-Sep-2007 18:29	365.0 M	342.6 M
CUSTOMER	AIT_TLD_MCFL_CNL_049PUC	FN:29	CUSTOMER	15-Sep-2007 18:29	365.0 M	342.6 M

Integrated Hole/Cement Volume Summary

Hole Volume = 0.54 M3
 Cement Volume = 0.38 M3 (assuming 5.50 IN casing O.D.)
 Computed from 365.0 M to 354.6 M using data channel(s) HCAL

OP System Version: 15C0-309

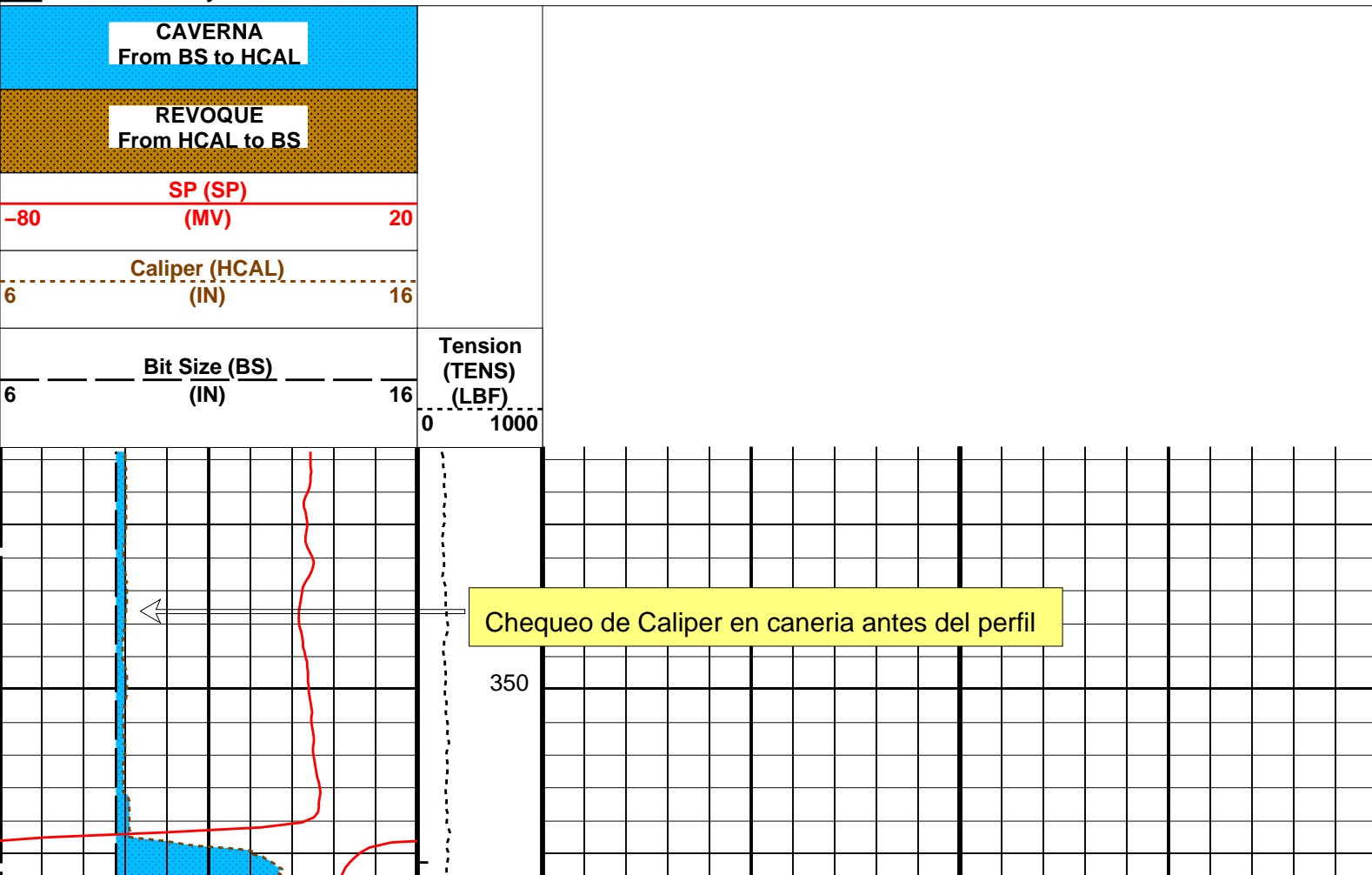
MCM

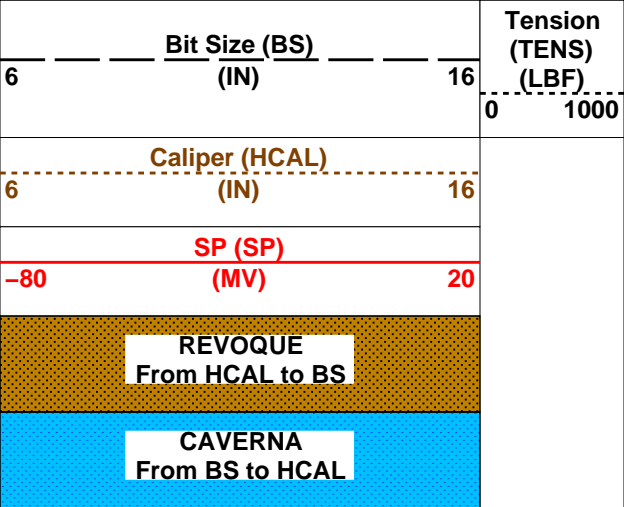
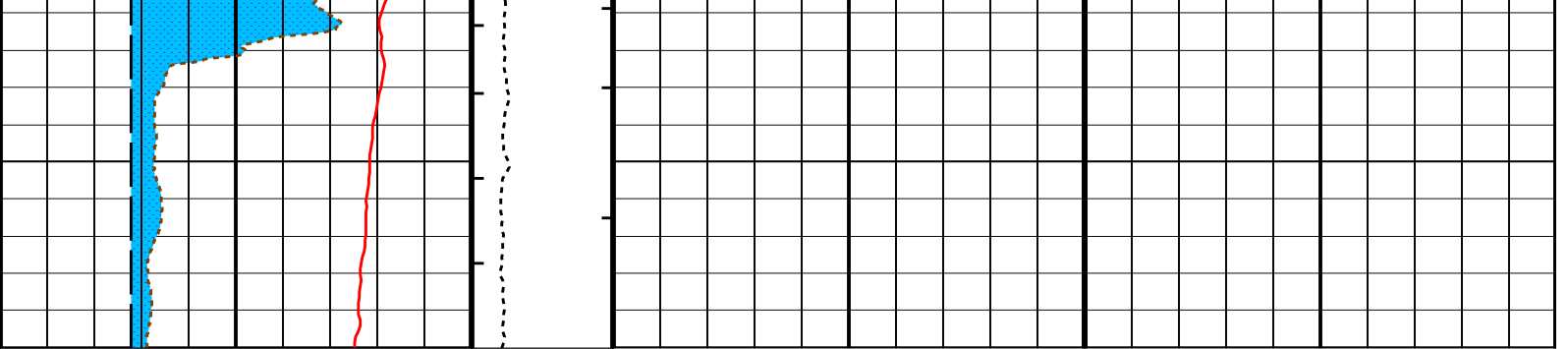
HILTB-FTB	SRPC-3402-Q3_2007	DTC-H	15C0-309
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PIP SUMMARY

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

Time Mark Every 60 S





PIP SUMMARY

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

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SPNV	HILTB-FTB: High resolution Integrated Logging Tool-DTS SP Next Value	-5 MV
FCD	HOLEV: Integrated Hole/Cement Volume Future Casing (Outer) Diameter	5.5 IN
HVCS	Integrated Hole Volume Caliper Selection	HCAL
BS	System and Miscellaneous Bit Size	8.750 IN
DO	Depth Offset for Playback	0.2 M
DORL	Depth Offset for Repeat Analysis	0.0 M
PP	Playback Processing	RECOMPUTE
TD	Total Depth	1253 M

Format: CALIPER Vertical Scale: 1:200

Graphics File Created: 15-Sep-2007 18:29

OP System Version: 15C0-309
MCM

HILTB-FTB SRPC-3402-Q3_2007 DTC-H 15C0-309

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_046PUP FN:22 PRODUCER 15-Sep-2007 17:26 365.0 M 340.9 M

Output DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_049PUP FN:28 PRODUCER 15-Sep-2007 18:29
 CUSTOMER AIT_TLD_MCFL_CNL_049PUC FN:29 CUSTOMER 15-Sep-2007 18:29

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_046PUP FN:22 PRODUCER 15-Sep-2007 17:26 365.0 M 340.9 M

DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:8	PRODUCER	15-Sep-2007 17:03	365.0 M	340.9 M
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_049PUP	FN:28	PRODUCER	15-Sep-2007 18:29	365.0 M	342.6 M
CUSTOMER	AIT_TLD_MCFL_CNL_049PUC	FN:29	CUSTOMER	15-Sep-2007 18:29	365.0 M	342.6 M

Integrated Hole/Cement Volume Summary

Hole Volume = 0.54 M3
 Cement Volume = 0.38 M3 (assuming 5.50 IN casing O.D.)
 Computed from 365.0 M to 354.6 M using data channel(s) HCAL

OP System Version: 15C0-309

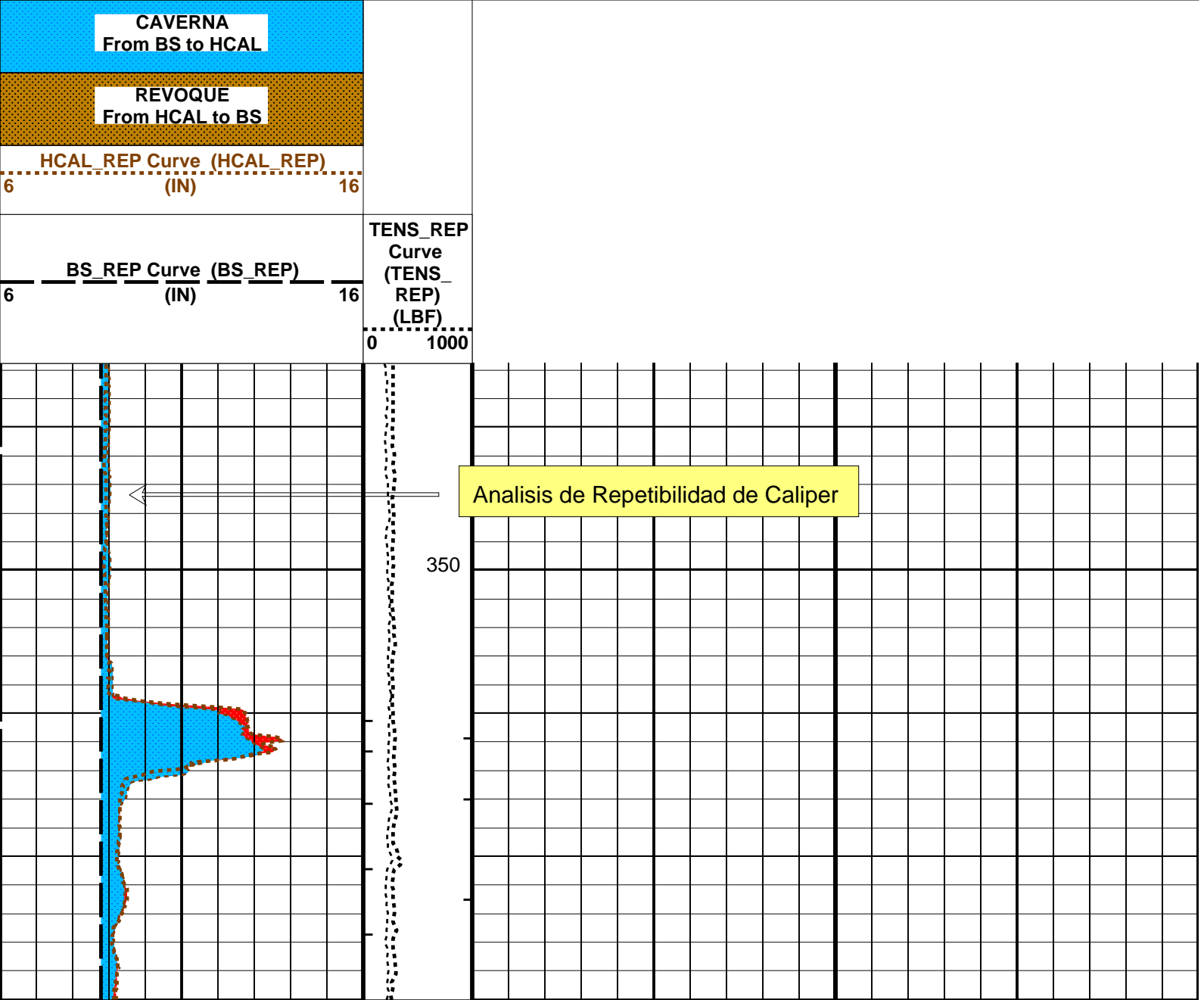
MCM

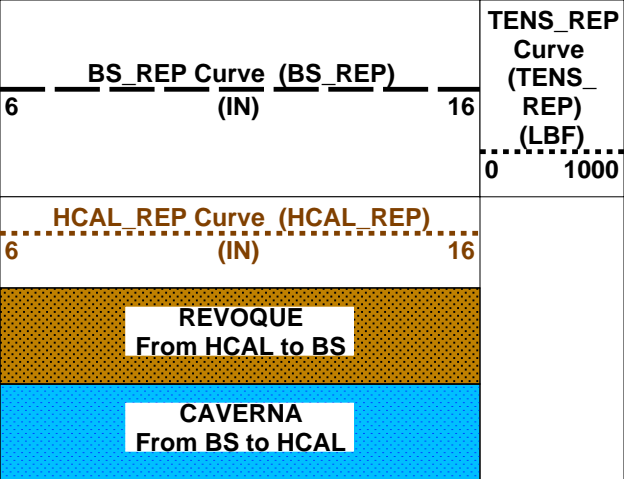
HILTB-FTB	SRPC-3402-Q3_2007	DTC-H	15C0-309
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PIP SUMMARY

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

Time Mark Every 60 S





PIP SUMMARY

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

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
	HOLEV: Integrated Hole/Cement Volume	
FCD	Future Casing (Outer) Diameter	5.5 IN
HVCS	Integrated Hole Volume Caliper Selection	HCAL
	System and Miscellaneous	
BS	Bit Size	8.750 IN
DO	Depth Offset for Playback	0.2 M
DORL	Depth Offset for Repeat Analysis	0.0 M
PP	Playback Processing	RECOMPUTE
TD	Total Depth	1253 M

Format: CALIPER_REP Vertical Scale: 1:200

Graphics File Created: 15-Sep-2007 18:29

OP System Version: 15C0-309
MCM

HILTB-FTB SRPC-3402-Q3_2007 DTC-H 15C0-309

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_046PUP	FN:22	PRODUCER	15-Sep-2007 17:26	365.0 M	340.9 M
DEFAULT	AIT_TLD_MCFL_CNL_039PUP	FN:8	PRODUCER	15-Sep-2007 17:03	1258.2 M	340.9 M

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_049PUP	FN:28	PRODUCER	15-Sep-2007 18:29
CUSTOMER	AIT_TLD_MCFL_CNL_049PUC	FN:29	CUSTOMER	15-Sep-2007 18:29

Schlumberger

CALIBRACIONES

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase							
Master: 30–Jul–2007 15:31 Before: 14–Sep–2007 7:41							
Thru Cal Magnitude – 0	0	0.6243	0.6269	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.280	1.286	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6346	0.6375	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7177	0.7208	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.342	1.348	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.940	1.949	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.936	1.945	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.372	1.383	N/A	N/A	N/A	V
Phase – 0	0	62.99	64.02	N/A	N/A	N/A	DEG
Phase – 1	0	61.99	63.03	N/A	N/A	N/A	DEG
Phase – 2	0	57.83	58.90	N/A	N/A	N/A	DEG
Phase – 3	0	56.96	58.03	N/A	N/A	N/A	DEG
Phase – 4	0	50.06	51.19	N/A	N/A	N/A	DEG
Phase – 5	0	48.01	49.18	N/A	N/A	N/A	DEG
Phase – 6	0	48.04	49.20	N/A	N/A	N/A	DEG
Phase – 7	0	43.36	44.87	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Electronics Calibration Check – Auxilliary

Master: 30–Jul–2007 15:31 Before: 14–Sep–2007 7:41							
Array Induction SPA Plus	990.5	990.6	991.3	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	-0.2180	-0.2111	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	0.9173	0.9180	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	-0.0002205	-0.0002124	N/A	N/A	N/A	V

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Test Loop Gain Correction

Master: 30–Jul–2007 15:31							
Test Loop Gain Magnitude – 0	0	1.032	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 1	0	1.014	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 2	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 3	0	1.014	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 4	0	0.9962	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 5	0	0.9865	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 6	0	0.9950	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 7	0	1.007	N/A	N/A	N/A	N/A	V
Phase – 0	0	0.3509	N/A	N/A	N/A	N/A	DEG
Phase – 1	0	0.5700	N/A	N/A	N/A	N/A	DEG
Phase – 2	0	-0.009840	N/A	N/A	N/A	N/A	DEG
Phase – 3	0	0.008522	N/A	N/A	N/A	N/A	DEG
Phase – 4	0	-0.03139	N/A	N/A	N/A	N/A	DEG
Phase – 5	0	-0.05229	N/A	N/A	N/A	N/A	DEG
Phase – 6	0	0.2490	N/A	N/A	N/A	N/A	DEG
Phase – 7	0	-0.1705	N/A	N/A	N/A	N/A	DEG

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Sonde Error Correction

Master: 30–Jul–2007 15:31							
R Sonde Error Correction – 0	0	-122.5	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	160.9	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	109.2	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	53.80	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	26.61	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	11.16	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	9.036	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-0.6909	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	-5.210	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	-226.7	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	-131.0	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	110.0	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	-0.3977	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	6.799	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	0.3075	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	1.122	N/A	N/A	N/A	N/A	MM/M

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Mud Gain Correction

Master: 30–Jul–2007 15:31							
Coarse – Mag, Real, Imag – 0	0	0.9811	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 1	0	0.9811	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 2	0	0.9811	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 0	0	0.9778	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 1	0	0.9778	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 2	0	0.9778	N/A	N/A	N/A	N/A	

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

Before: 14–Sep–2007 7:45							
BS Window Ratio	0.7651	N/A	0.7634	N/A	N/A	N/A	
BS Window Sum	11770	N/A	11770	N/A	N/A	N/A	CPS
SS Window Ratio	0.4779	N/A	0.4799	N/A	N/A	N/A	

SS Window Sum	10290	N/A	10250	N/A	N/A	N/A	CPS
LS Window Ratio	0.2944	N/A	0.2979	N/A	N/A	N/A	
LS Window Sum	1255	N/A	1248	N/A	N/A	N/A	CPS

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

Before: 14–Sep–2007 7:45

BS PM High Voltage (Command)	1936	N/A	1947	N/A	N/A	N/A	V
SS PM High Voltage (Command)	2094	N/A	2141	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1938	N/A	1975	N/A	N/A	N/A	V

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

Before: 14–Sep–2007 7:45

BS Crystal Resolution	12.84	N/A	12.81	N/A	N/A	N/A	%
SS Crystal Resolution	11.50	N/A	12.01	N/A	N/A	N/A	%
LS Crystal Resolution	9.627	N/A	9.606	N/A	N/A	N/A	%

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

Before: 14–Sep–2007 7:47

Raw B0 Resistivity	3875	N/A	3838	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3792	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3823	N/A	N/A	N/A	OHMM

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

Before: 14–Sep–2007 7:50

HILT Caliper Zero Measurement	8.000	N/A	7.755	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.14	N/A	N/A	N/A	IN

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

Before: 14–Sep–2007 7:48

Gamma Ray Background	30.00	N/A	39.74	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	152.7	N/A	152.7	N/A	N/A	13.89	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: 2–Jul–2007 17:12 Before: 14–Sep–2007 7:40

CNTC Background	32.18	32.18	32.06	N/A	N/A	4.827	CPS
CFTC Background	33.12	33.12	32.15	N/A	N/A	4.968	CPS

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

Master: 2–Jul–2007 17:12

Thermal Near Corr. (Tank)	5800	5410	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2289	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.363	N/A	N/A	N/A	N/A	

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

Before: 14–Sep–2007 7:39

Z–Axis Acceleration	9.810	N/A	9.797	N/A	N/A	N/A	M/S2
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High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results

Master: 26–Aug–2007 17:59

Rho Aluminum	2.596	2.597	--	--	--	--	G/C3
Rho Magnesium	1.686	1.687	--	--	--	--	G/C3
Pe Aluminum	2.570	2.568	--	--	--	--	
Pe Magnesium	2.650	2.631	--	--	--	--	

High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary

Master: 26–Aug–2007 17:59

BS Average Deviation	0	0.2898	--	--	--	--	%
BS Max Deviation	0	1.064	--	--	--	--	%
SS Average Deviation	0	0.2846	--	--	--	--	%
SS Max Deviation	0	0.8018	--	--	--	--	%
LS Average Deviation	0	0.4744	--	--	--	--	%
LS Max Deviation	0	0.8770	--	--	--	--	%

The GLS–VJ source activity is acceptable.

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

NCT–B Water Temperature 5.4 DEGC.
Thermal Housing Size 3.366 IN.
NSR–F serial number 1089

Primary Equipment:
 Array Induction Tool – H
 Rm/SP Bottom Nose
 Array Induction Sonde
 HILT high-Resolution Mechanical Sonde
 HILT Rxo Gamma-ray Device
 HILT Micro Cylindrically Focused Log Dev
 GR Logging Source
 HILT High Res. Control Cartridge

AIT – H 379
 AHRM – A
 AHIS – BA 379
 HRMS – B 704
 HRGD – B 1940
 MCFL –
 GLS – VJ 3766
 HRCC – B 704

Auxiliary Equipment:

High resolution Integrated Logging Tool–DTS Wellsite Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6243		0.6050	62.99		71.00
	Before	0.6269			64.02		
1	Master	1.280		1.270	61.99		70.00
	Before	1.286			63.03		
2	Master	0.6346		0.6230	57.83		66.00
	Before	0.6375			58.90		
3	Master	0.7177		0.7040	56.96		65.00
	Before	0.7208			58.03		
4	Master	1.342		1.337	50.06		59.00
	Before	1.348			51.19		
5	Master	1.940		1.955	48.01		57.00
	Before	1.949			49.18		
6	Master	1.936		1.955	48.04		57.00
	Before	1.945			49.20		
7	Master	1.372		1.415	43.36		53.00
	Before	1.383			44.87		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 30-Jul-2007 15:31				Before: 14-Sep-2007 7:41			

High resolution Integrated Logging Tool–DTS Wellsite Calibration					
Electronics Calibration Check – Auxilliary					
Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		990.6	Master		-0.2180
Before		991.3	Before		-0.2111
941.0 (Minimum)		990.5 (Nominal)	1040 (Maximum)	-50.00 (Minimum)	
				0 (Nominal)	
				50.00 (Maximum)	
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.9173	Master		-0.0002205
Before		0.9180	Before		-0.0002124
0.8700 (Minimum)		0.9150 (Nominal)	0.9600 (Maximum)	-0.05000 (Minimum)	
				0 (Nominal)	
				0.05000 (Maximum)	
Master: 30-Jul-2007 15:31			Before: 14-Sep-2007 7:41		

High resolution Integrated Logging Tool–DTS Wellsite Calibration					
Test Loop Gain Correction					
Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG	
0	1.032		0.3509		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)
1	1.014		0.5700		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)

2	1.012	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.009840	0 (Nominal)	3.000 (Maximum)
3	1.014	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	0.008522	0 (Nominal)	3.000 (Maximum)
4	0.9962	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.03139	0 (Nominal)	3.000 (Maximum)
5	0.9865	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.05229	0 (Nominal)	3.000 (Maximum)
6	0.9950	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	0.2490	0 (Nominal)	3.000 (Maximum)
7	1.007	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.1705	0 (Nominal)	3.000 (Maximum)

Master: 30-Jul-2007 15:31

High resolution Integrated Logging Tool-DTS Wellsite Calibration								
Sonde Error Correction								
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-122.5	-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)	-5.210	-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	160.9	114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)	-226.7	-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	109.2	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)	-131.0	-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	53.80	39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)	110.0	-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	26.61	15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)	-0.3977	-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	11.16	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)	6.799	-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.036	5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)	0.3075	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-0.6909	-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)	1.122	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

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High resolution Integrated Logging Tool-DTS Wellsite Calibration								
Mud Gain Correction								
Idx	Value	Coarse - Mag, Real, Imag			Value	Fine - Mag, Real, Imag		
0	0.9811	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.9778	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.9811	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.9778	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.9811	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.9778	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 30-Jul-2007 15:31

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	Value

Before		0.7634	Before		0.4799	Before		0.2979
0.7268 (Minimum)	0.7651 (Nominal)	0.8033 (Maximum)	0.4540 (Minimum)	0.4779 (Nominal)	0.5018 (Maximum)	0.2797 (Minimum)	0.2944 (Nominal)	0.3091 (Maximum)
Phase	BS Window Sum CPS	Value	Phase	SS Window Sum CPS	Value	Phase	LS Window Sum CPS	Value
Before		11770	Before		10250	Before		1248
11180 (Minimum)	11770 (Nominal)	12360 (Maximum)	9776 (Minimum)	10290 (Nominal)	10800 (Maximum)	1192 (Minimum)	1255 (Nominal)	1318 (Maximum)

Before: 14-Sep-2007 7:45

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		1947	Before		2141	Before		1975
1836 (Minimum)	1936 (Nominal)	2036 (Maximum)	1994 (Minimum)	2094 (Nominal)	2194 (Maximum)	1838 (Minimum)	1938 (Nominal)	2038 (Maximum)

Before: 14-Sep-2007 7:45

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		12.81	Before		12.01	Before		9.606
11.84 (Minimum)	12.84 (Nominal)	13.84 (Maximum)	10.50 (Minimum)	11.50 (Nominal)	12.50 (Maximum)	8.627 (Minimum)	9.627 (Nominal)	10.63 (Maximum)

Before: 14-Sep-2007 7:45

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		3838	Before		3792	Before		3823
3565 (Minimum)	3875 (Nominal)	4185 (Maximum)	3524 (Minimum)	3830 (Nominal)	4136 (Maximum)	3524 (Minimum)	3830 (Nominal)	4136 (Maximum)

Before: 14-Sep-2007 7:47

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		7.755	Before		12.14
6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)	9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)

Before: 14-Sep-2007 7:50

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		39.74	Before		152.7	Before		165.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	138.9 (Minimum)	152.7 (Nominal)	166.6 (Maximum)	150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)

Before: 14-Sep-2007 7:48

High resolution Integrated Logging Tool-DTS Wellsite Calibration					
Zero Measurement					
Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		32.18	Master		33.12
Before		32.06	Before		32.15
5.000 (Minimum)	32.18 (Nominal)	40.00 (Maximum)	5.000 (Minimum)	33.12 (Nominal)	40.00 (Maximum)

Master: 2-Jul-2007 17:12

Before: 14-Sep-2007 7:40

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		5410	Master		2289	Master		2.363
4700 (Minimum)	5800 (Nominal)	6900 (Maximum)	1900 (Minimum)	2400 (Nominal)	2900 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 2-Jul-2007 17:12

High resolution Integrated Logging Tool-DTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration M/S2	Value
Before		9.797
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	
Before: 14-Sep-2007 7:39		

High resolution Integrated Logging Tool-DTS Master Calibration							
Electronics Calibration Check - Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6243		0.6050	62.99		71.00
1	Master	1.280		1.270	61.99		70.00
2	Master	0.6346		0.6230	57.83		66.00
3	Master	0.7177		0.7040	56.96		65.00
4	Master	1.342		1.337	50.06		59.00
5	Master	1.940		1.955	48.01		57.00
6	Master	1.936		1.955	48.04		57.00
7	Master	1.372		1.415	43.36		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 30-Jul-2007 15:31							

High resolution Integrated Logging Tool-DTS Master Calibration					
Electronics Calibration Check - Auxiliary					
Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		990.6	Master		-0.2180
	941.0 (Minimum) 990.5 (Nominal) 1040 (Maximum)			-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.9173	Master		-0.0002205
	0.8700 (Minimum) 0.9150 (Nominal) 0.9600 (Maximum)			-0.05000 (Minimum) 0 (Nominal) 0.05000 (Maximum)	
Master: 30-Jul-2007 15:31					

High resolution Integrated Logging Tool-DTS Master Calibration					
Test Loop Gain Correction					
Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG	
0	1.032		0.3509		
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
1	1.014		0.5700		
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
2	1.012		-0.009840		
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
3	1.014		0.008522		
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
4	0.9962		-0.03139		
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
5	0.9865		-0.05229		
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
6	0.9950		0.2490		
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
7	1.007		0.1705		
		0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	

1.007	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.1705	0 (Nominal)	3.000 (Maximum)
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Master: 30-Jul-2007 15:31

High resolution Integrated Logging Tool-DTS Master Calibration								
Sonde Error Correction								
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-122.5				-5.210			
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	160.9				-226.7			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	109.2				-131.0			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	53.80				110.0			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	26.61				-0.3977			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	11.16				6.799			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.036				0.3075			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-0.6909				1.122			
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 30-Jul-2007 15:31

High resolution Integrated Logging Tool-DTS Master Calibration								
Mud Gain Correction								
Idx	Value	Coarse - Mag, Real, Imag			Value	Fine - Mag, Real, Imag		
0	0.9811				0.9778			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.9811				0.9778			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.9811				0.9778			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 30-Jul-2007 15:31

High resolution Integrated Logging Tool-DTS Master Calibration								
Inversion results								
Phase	Rho Aluminum G/C3			Value	Phase	Rho Magnesium G/C3		Value
Master				2.597	Master			1.687
	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				2.568	Master			2.631
	2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)			2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)

Master: 26-Aug-2007 17:59

High resolution Integrated Logging Tool-DTS Master Calibration									
Deviation Summary									
Phase	BS Average Deviation %			Value	Phase	SS Average Deviation %			Value
Master				0.2898	Master				0.2846
	-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)			-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)	
Phase	LS Average Deviation %			Value	Phase	LS Average Deviation %			Value
Master				0.4744					
	-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)						

Phase	BS Max Deviation %	Value	Phase	SS Max Deviation %	Value	Phase	LS Max Deviation %	Value
Master		1.064	Master		0.8018	Master		0.8770
	-1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)			-2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)			-3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)	

Master: 26-Aug-2007 17:59

High resolution Integrated Logging Tool-DTS Master Calibration						
Zero Measurement						
Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value	
Master		32.18	Master		33.12	
	5.000 (Minimum) 32.18 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 33.12 (Nominal) 40.00 (Maximum)		

Master: 2-Jul-2007 17:12

High resolution Integrated Logging Tool-DTS Master Calibration									
Tank Measurement									
Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value	
Master		5410	Master		2289	Master		2.363	
	4700 (Minimum) 5800 (Nominal) 6900 (Maximum)			1900 (Minimum) 2400 (Nominal) 2900 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)		

Master: 2-Jul-2007 17:12

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge
DTC-H Telemetry Cartridge

DTCH - A
DTCH - A

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing

ECH - KC

COMPANIA: YPF S.A.

POZO: YPF.Ch.Gbk-736

CAMPO: GRIMBEEK

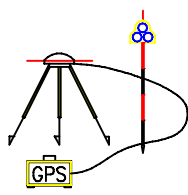
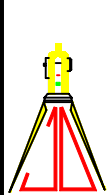
PROVINCIA: CHUBUT

PAIS: ARGENTINA

PRIMERA LECTURA	1250.6 m
PROFUNDIDAD PERFIL	1253 m
PROF. PERFORADOR	1250 m
BUJE DE VASTAGO	648 m
MESA ROTATIVA	647.7 m
NIVEL TERRENO	642.7 m

COMBINADA

ESCALA: 1/200



POSICIONAMIENTO SATELITAL - G.P.S. + R.T.K.
 UBICACION Y TRIANGULACION DE POZOS
 REPLANTEOS GENERALES, OLEODUCTOS
 GASODUCTOS, SISMICAS, MENSURAS, ETC...

J.D. s.r.l. - SERVICIOS TOPOGRAFICOS

Av. Sargento Cabral 162 - TE(fax): 0297/4471105
 9000 - Comodoro Rivadavia - Chubut

GEORREFERENCIACION

COORDENADAS: **DEFINITIVAS**

CONTRATO: **REPSOL - YPF**

AREA/YACIMIENTO: **GRIMBEEK**

SISTEMA: **PAMPA DEL CASTILLO**

POZO: **Gbk-736**

X=4.951.707,22

Y= 2.596.864,94

Z = 642,70 m

PUNTO RECEPTOR BASE: PEJ-4

CALIDAD PUNTO BASE: PUNTO AJUSTE DE REDES

MODALIDAD DE MEDICION: CINEMATICO

Solucion: L1-L2-Fixed Long. Vectorial: 4688.655m

Azimuth: 58° 35'23" Delta H (elipsoidal) : -40.116m

Varianza: 1.407

Receptor Base: 5700 Receptor Movil: 5800

Dif. X = -15.78m Dif. Y = -4.06m Dif. Z = -0.30m

COORDENADAS GEOGRAFICAS:(Sistema: WGS 84)

LAT: 45°34'54.0543"S LON: 67°45'41.7962"W ELEV: 653.83m

Observaciones: Ubicado por J.D. SRL, Georreferenciado para el Equipo PI-359

FECHA: 07 de SEPTIEMBRE de 2007

OPERADOR: S. VELASQUEZ

POZO: Gbk-736
ZONA: GRIMBEEK
AREA: M. BEHR

FECHA: 23/09/2007
EQUIPO PI-129

OBJETIVO:

BAJAR INSTALACION DE PRODUCCION (PCP)

Fondo Pozo: +/- 1250 mts

DISEÑO A BAJAR:

TBG

PROFUNDIDADES

1 BAR COLLAR 2 7/8" a +- 1 TBG FILTRO 3 TBG LISO 2.7/8"	1078	mts
1 ANCLA DE TORQUE +- 1 NIPLE DE PARO (PROVEE WEATHERFORD) 1 ESTATOR GEREMIA 42-40-300 (PROVEE WEATHERFORD) 1 TUBING 2.7/8" LISO	1040	mts (<u>ASEGURARSE QUE ANCLA TORQUE QUEDE SOBRE PRIMER PUNZADO</u>)
1 NIPLE ASIENTO BHD 2 7/8" +- +-108 TBG 2. 7/8"	1025	mts

B/B

1 ROTOR GEREMIA 42-40-300 (PROVEE WEATHERFORD)
+-135 BARRAS DE BOMBEO 7/8" (GRADO D) NUEVAS
TROZOS 1" Grado D
1 VASTAGO BOMBEO 1.1/4" x 10'

NOTA

ANTES DE BAJAR DISEÑO CALIBRAR ROTOR PCP EN BHD 2.7/8"

PEDIR CON 2 hs ANTICIPACION PERSONAL WEATHERFORD P/ AJUSTE MEDIDA

CABEZAL

DL-1 (PROVEE WEATHERFORD)

MOTOR

20 HP

SI PUNZADO 1043/46 VIENE SIN ENTRADA ARRANCAR A 80 RPM - SI ESTA CAPA DA MAS DE 300 lph ARRANCAR A 120 RPM

VARIADOR DE FRECUENCIA PROVEE WEATHERFORD

NOTA : ASEGURARSE QUE LA INST. DE FONDO y SUPERFICIE COINCIDA C/ ESTE PROGRAMA

POZO:	Gbk. 736	OBJETO:	TERMINACION	PEP:	RS1EC.7C03.53.P0002
EQUIPO:	PI 129	Est.Actual :		PROXIMO POZO:	A CONFIRMAR
Inicio:		PROYECTO:		COSTO OBJETIVO U\$S:	
Termino:		CABLE	Cta	FRAC	Acido
					M.Fdo.
					PRESUPUESTO \$:
					PRESUPUESTO U\$S:
					SALINIDAD:
					g/l (en pileta)

Casing

Capa N°

NEUTRÓN

INDUCCIÓN

Ø 5 1/2" (15,5#)

Ø 9 5/8" : 353,71 mts

CII

A 10 → 1043.0 - 45.5 } B

A 30 → 1050.0 - 52.5 } A

Tope cto: 775 mbbp

Zap.: 1250,0 mbbp

Collar: 1245,29 mbbp

PF: 1250.00 mbbp

Tapón Fijo

CSG Roto

A. Montar Equipo de RTP de acuerdo a procedimientos.

B-Punzar con cañón 4" 4TPP, 32 gr, 0-90°:

Prof Inducción	Espesor	Prof Neutrón
1050.0 - 52,5	2,5	A-30

C. Ensayar como se indica en esquema: **A)**
Efectuar ensayo TST como se indica en el programa adjunto.

D-Punzar con cañón 4" 4TPP, 32 gr, 0-90°:

Prof Inducción	Espesor	Prof Neutrón
1043.0 - 45.5	2,5	A-10

E. Ensayar como se indica en esquema: **B**

F. Si resultara SE probar admisión y reensayar.

G. En caso de extraer hidrocarburo tomar muestras para análisis y enviar a Epsilon.

H. En caso de ser gas medir presiones y tomar muestra

I. De acuerdo a los resultados consultar pasos a seguir.

**NOTA: CAPAS CON PORCENTAJES DE AGUA MAYORES A 50%:
CONSULTAR ANTES DE DAR POR FINALIZADO ENSAYO**

ESQUEMA DE POZO					
POZO: Gbk-736 Vertical		COORDENADAS Boca de Pozo (provisorias)		X:	4951723
				Y:	2596869
UWI: AR0100007250 PEP: RS1EC.7C03.53.P0002		COTA (msnmm)		Z:	650
				PROF.FINAL MD:1250 mbbp (-600 mbnm)	
		Cañería Guía 9 5/8": 350 mbbp		Registros a Cable	
T E R C I A R I O	FM PATAGONIA + SANTA CRUZ	Alternancia de arcillas y arenisca grano fino a medio.	Zona sin interés		
	FM SARMIENTO	TOPE Sarm +/- : 310 (+340) Tobas finas poco consolidadas.			
	FM SALAMANCA + RIO CHICO	TOPE RCh +/- : 400 (+250) Arcilla consolidada y fragmentada, arenisca cuarzosa glauconítica.			
G R U P O	F M. F E L T R E B L O	TOPE CI +/- : 770 (-120)	775 mts	ZONA de interés petrolero	AIT (fondo a guía) CAL,DENS-NEUTRON (Zona de Interés) RFT (Zona de Interés) Testigos Laterales (30 ptos.) (Opcionales)
		TOPE CII +/- : 1030 (-380) Areniscas de grano fino a medio, cemento arcilloso o calcareo + Arcilitas.			
Ref: Gbk-711		Observación: Se entubará con cañería de 5 1/2"			

Pozo Gbk-736



UNIDAD DE NEGOCIOS ARGENTINA SUR

Unidad Económica CHUBUT-CAÑADON SECO

Distrito MANANTIALES BEHR

Coordenadas	4.951.707,22 X	Finalizó Terminación	25-sep-2007
	2.596.864,94 Y		
Cota Boca Pozo	642,70 mts.s.n.m.		

GUIA : Zpto 9.5/8" en 353,71m - 380 bls Cto + 40 bls x E/C - Tope Anillo Cto @ BP
14,10m 9.5/8" K55 36# + 339,31m 9.5/8" H40 32,3# + 0,30m Acc.Ctció

> Schlumberger registró perfiles a pozo abierto - Fondo 1253,00m Setiembre 2007

AISLACION : Zpto 5 1/2" en 1250,00m - 310 bls Cto - Tope Anillo Cto @ 651m

14,35m 5 1/2" K55 15,5# + 1230,44m 5 1/2" K55 14# + 4,41m 5 1/2" K55 15,5# + 0,80m Acc.C

> ARTEX c/Pluma : NE-CBL-VDL en 1241,50m / 775m - Fondo 1243m Setiembre 2007

Profundidad de Punzados por INDUCCION.

ETAPA	Finalizó	
Perforación	15-sep-2007	
Terminación	25-sep-2007	Productor PCP
Intervención	16-dic-2007	Cbio PCP x pesca v/b

Zpto 9.5/8" en 353,71 mts

9.5/8" H-40 32,3#
(229/244)

5 1/2" K55 15,5#-14#
(126-127/140)

ESTADO

EEP (según Cap.IV° Julio 2008)

No registra REPARACIONES

Unica INTERVENCION : 16-Diciembre-2007

-Pzdo- 1043,0 / 45,5 } T (1800 l/h PET c/ Ar N-780m IT-84)

-Pzdo- 1050,0 / 52,5 } T (1140 l/h PET N-843m IT-12) TSI Fluencia^{12hrs} MEMORY Cerrado^{24hrs}

Rno Constató fondo en 1.220,00 mts Diciembre 2007

Cto Constató Fondo en 1.243,00 mts Setiembre 2007 - Neutrón ARTEX

Collar 5 1/2" en 1.244,79 mts
Zapato 5 1/2" en 1.250,00 mts

Fondo Perforado 1.250,00 mts
Fondo Schlumberger 1.253,00 mts

Fuentes consultadas :
Legajo de pozo / Historial
DIMS / dfw

DATOS A LLENAR					
			CARGAR DATOS		
		POZO	Gbk- 736		
		BATERIA	GRIMBEEK		
		EQUIPO	PI - 129		
		FECHA	18/09/2007		
		RUBRO	TERMINACION		
		COSTO OBJETIVO			
		NOMBRE DEL PROYECTO	GRIMBEEK		
		N°DE GRAFO			
		PEP:	RS1EC.7C03.53.P0002		
		ZONA	GRIMBEEK		
		FLUIDO DE TRABAJO	AGUA DE REC. SECUNDARIA		
		FINALIZO PERFORACION	15 de septiembre de 2007		
		ULTIMA INTERVENCION	Espera Terminación		
COORDENADAS					
		X		4.837.999,00	
		Y		2.606.340,00	
		Z		286,38	
COMPAÑIAS DE SERVICIO					
		CABLE	ARTEX		
		TORRE	PRIDE		
		CEMENTACION	SCHLUMBERGER		
		ESTIMULACION	SCHLUMBERGER		
		MOTOR DE FONDO	TASSAROLI		
		COILED TUBING	-		
PARA PUNZAR					
		CAÑÓN Ø	Cañón Ø 4"	4" ó 5"	
		TIROS POR PIE	4 y 6 TxP 32 Grs	4	
CASING					
		EN BOCA DE POZO Ø Y mts.	5 1/2"	7" a 23	
		DIAMETRO Y LIBRAJE	5 1/2" 14 #	5-1/2" 15,5	
5 1/2"	12,50	14,2	1132		
6 5/8"	18,54	0,0			
7"	20,60	0,0			
9 5/8"	39,40	0,0			
		Total de m³+5		NO TOCAR "PARA USO DEL BACTERICIDA"	57,69
		COLLAR DIFERENCIAL	1245,29 m		
		ZAPATO	1250,00 m		
		PROFUNDIDAD FINAL	1250,00 m		
INSTALACION FINAL					
		DEL POZO	No posee		
MATERIAL DE BOMBEO					
		DEL POZO	No posee		
HERRAMIENTA A BAJAR					
		COLOCAR TIPO DE HTA.Y Ø			
		CALIBRAR HASTA	-		
		HERMETICIDAD DEL CSG DESDE	-		



DIVISION REGIONAL SUR
UNIDAD ECONOMICA CHUBUT - CAÑADON SECO
DISTRITO ZONA CENTRAL

PROGRAMA OPERATIVO del POZO :

Gbk- 736

SUBREGION :

CH

ZONA :

GRIMBEEK

BAT.GRIMBEEK

RUBRO:

TERMINACION

PROYECTO:

GRIMBEEK

COSTO OBJETIVO:

U\$S

COSTO ESTIMADO:

U\$S

DIAS ESTIMADOS:

7,25

FLUIDO DE REPARACION:

AGUA DE REC. SECUNDARIA

EQUIPO :

PI - 129

CANTIDAD:

14,2 m³

PEP: RS1EC.7C03.53.P0002

COMPAÑIAS ASIGNADAS:

CABLE: ARTEX

TORRE: PRIDE

CEMENTACION: SCHLUMBERGER

ESTIMULACION: SCHLUMBERGER

MOTOR DE FONDO: TASSAROLI

COILED TUBING: -

FINALIZO PERFORACION :

15-sep-07

ULTIMA INTERVENCION:

Espera Terminación

OBSERVACIONES:

COORDENADAS:

X: 0,00

Y: 0,00

COTA:

Z: 0,00

Altura mesa Rotary: 3,5 m

Elevación mesa Rotary: - m



RESERVA N° 2555733

M. BEHR

18/09/2007

PEP: RS1EC.7C03.53.P0002

UNIDAD ECONOMICA CHUBUT-CDON. SECO
DISTRITO ZONA CENTRAL

X: 0,00 Z: 0,00
Y: 0,00

PROGRAMA OPERATIVO : **TERMINACION**

POZO : **Gbk- 736** ZONA : **GRIMBEEK** SUBREGION : **CH** BAT. **GRIMBEEK**

FLUIDO DE REPARACION: **AGUA DE REC. SECUNDARIA** CANTIDAD: **14,2** m³

INSTALACION FINAL:

INSTALACION BBEO:

EQUIPO: **PI - 129**

COMPAÑIA WIRE LINE:

ARTEX

N° 5 1/2" 14 #
CAPA 5 1/2"

PROGRAMA OPERATIVO

Cia Artex 19/09/07 con pluma corrio perfil CBL/VDL-N desde 1241 m hasta 775 m Reg. - Tope de cemento 660 m

9.5/8" 353,71 m.

- 1º) Montar equipo completo, de acuerdo a los procedimientos. Realizar Check List.
- 2º) Si existe buena aislación, y previa verificación de correlación punzar con cañón de 4" a 4 TPP 32 grs. (0° - 90°)

Inducción	Neutrón
1050,0/52,5	
- 2º) Bajar conjunto de Tpn y Pkr
 Ensayar **A** por pistoneo, hasta estabilizar Q. , N. , IT.
- 3º) Efectuar ensayo TST, con Cía S.A.P. Ver programa adjunto.
Sacar Tpn y Pkr
- 4º) Punzar c/4" - 4 TPP - 32 grs. (0° - 90°)

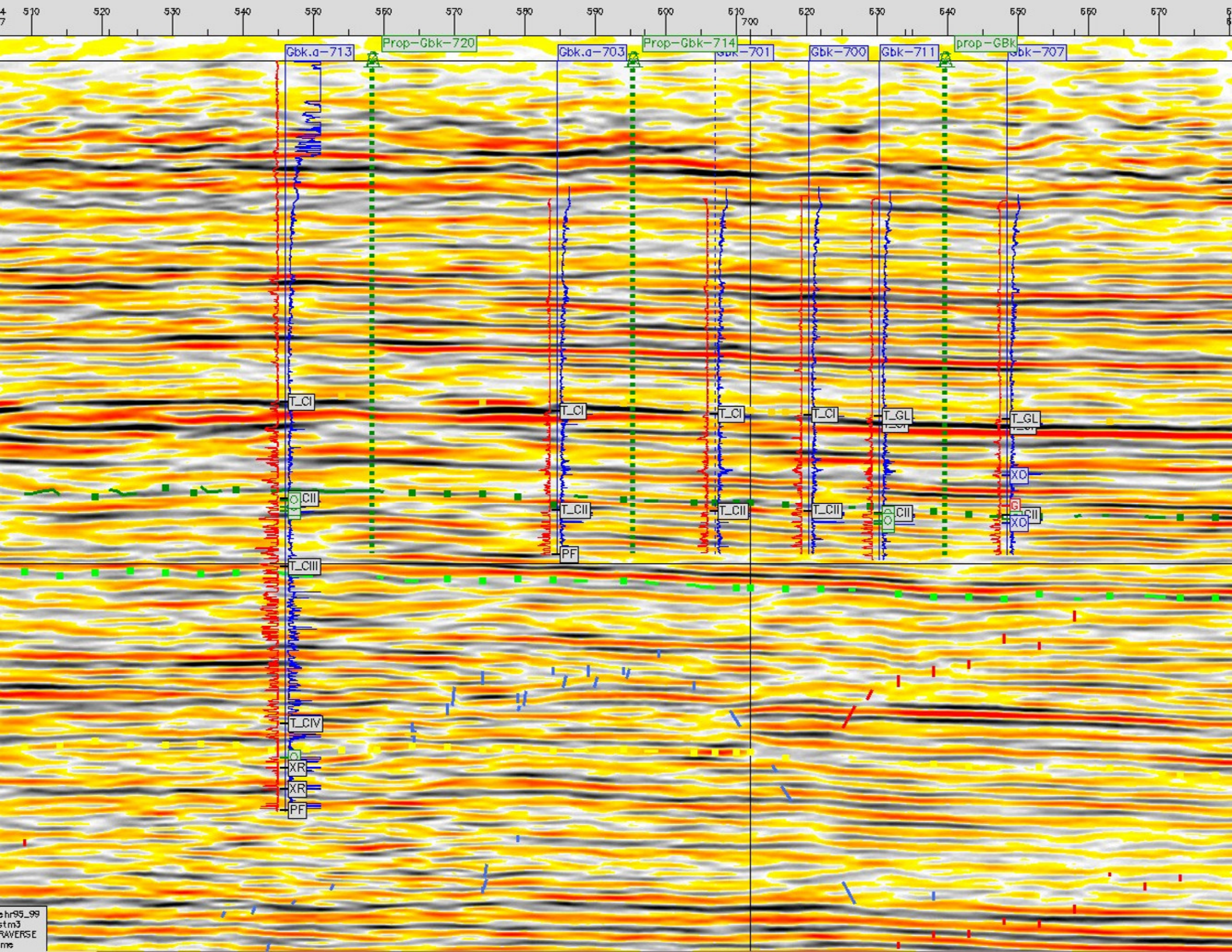
Inducción	Neutrón
1043,0/45,5	
- 5º) Bajar conjunto de Tpn y Pkr
- 6º) Ensayar **B** por pistoneo, hasta estabilizar Q. , N. , IT.
- 8º) De acuerdo a los resultados se indicará programa a seguir.

NOTA:
 Si la zona resulta S/E, probar admisión y reensayar.
 En caso de extraer hidrocarburos, tomar muestra para análisis y enviar a Epsilon.
 En caso de ser Gas, medir presiones y tomar muestra.
Ensayar a bajo régimen para minimizar el aporte de arena
 De acuerdo al resultado los ensayos se determinará programa a seguir.
Capas con porcentajes de agua mayores a 50 %, consultar antes de dar por finalizado el ensayo.

Collar: 1245,29
Zto: 1250,00
Fdo: 1250,00

PRESUPUESTO POZO			Gbk- 736			
PEP: RS1EC.7C03.53.P0002						
CAN.	ITEM	HS.	\$	U\$S	DESCRIPCION DE MANIOBRAS	
1	3	10,00	6334,11	784,06	DTM Equipo completo, Colocar BOP.	
0	6	0,00	0,00	0,00		
14	1	14,00	5911,78	731,78	Baja Tpn y Pkr con Tbg. A.M.C	
50	1	50,00	21113,50	2613,50	Realiza dos ensayos + cambio de zona + lava arena c/pescador	
36	1	36,00	15201,72	1881,72	Realizar un TST ensayo de 12 hs y cierre de 24 hs	
24	1	24,00	10134,48	1254,48	Bajar Instalación de Producción.	
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
0	1	0,00	0,00	0,00		
6	2A	6,00	2280,24	282,24	Stand By Wireline	
0	2A	0,00	0,00	0,00	Stand By operacion de fractura	
0	2A	0,00	0,00	0,00	Stand By	
0	2A	0,00	0,00	0,00	Stand By	
5	2A	5,00	1900,20	235,20	Stand by por reuniones de seguridad, carga y descarga de mat.	
0	2A	0,00	0,00	0,00		
0	2B	0,00	0,00	0,00	Stand by sin personal.	
24	2C	24,00	6587,52	815,52	Equipo parado por inclemencias de tiempo.-	
Total Horas incl.DTM		169,00				
Total de Días		7,04				
RESUMEN						
		ITEM	CANTIDAD	UNI COSTO	Tarifa Nueva RTP	
				\$	(U\$S)	
		1 (Opert.Normal)	124,00	23.935,13	\$52.361,48	
		2A (SB c/Pers.)	11,00	1.910,91	\$4.180,44	
		2B (SB s/Pers.)	0,00	0,00	\$0,00	
		2C (Factor Clima)	24,00	3.011,34	\$6.587,52	
		3 (DTM)	1,00	2.895,41	\$6.334,11	
		3B (C.Sólidas)	0,23	1.643,04	\$4.929,17	
		3C (Carg.y Desc.)	0,23	0,00	\$0,00	
		4B (C.Líquidas)	0,23	2.699,28	\$7.041,67	
		5 (Pileta Ecol.)	7,00	3.262,96	\$6.966,75	
		5A (Tpte.pil.ecol.)	1,00	0,00	\$0,00	
		6 (Conj.DSK-Pieza)	0,00	0,00	\$0,00	
		7 SUMEX+PEET+SINDICATO	0,23	2.533,72	\$7.601,24	
		Subtotal	169,00	41.891,79	\$96.002,38	
					U\$S 9.891,31	
		Wire	Perfil N Corr.+N F	2.800,00	\$1.948,24	
			Punzado	3.500,00	\$2.435,30	
		Line	Fijado de Tapón	1.800,00	\$1.252,44	
		Cementación		0,00	\$0,00	
		Fractura Hidráulica		0,00	\$0,00	
		Htas. de fractura		0,00	\$0,00	
		Estimulación ácida		0,00	\$0,00	
		Bombeo - Prueba de admisión		0,00	\$0,00	
		Fresa		1.200,00	\$906,07	
		Válvula Implosora		20.000,00	\$15.101,20	
		Hot-Oil + Camión chupa		0,00	\$0,00	
		Camión Chupa		0,00	\$0,00	
		Transporte Gasoil		0,00	\$0,00	
		Coiled Tubing		0,00	\$0,00	
		Motor de fondo		0,00	\$0,00	
		Gas-Oil(\$104xm3)		0,00	\$0,00	
		Alquiler de Radio		0,00	\$0,00	
		Limpieza de Locación		400,00	\$240,00	
		Subtotal		29.700,00	\$21.883,25	
					U\$S 14.467,00	
		TOTAL		71.591,79	\$117.885,63	
					U\$S 24.358,31	
		OBJETIVO (U\$S)		0	PRESUPUESTO	
		Capas punzadas		4	TOTAL EN U\$S	
		Profundidad		1.147,00		
		Nº de Pruebas		0	Tipo de cambio:	
		Nº de Ensayos		3	0,33333	
					63653,13	

PROGRAMA OPERATIVO									
1º)	Montar equipo completo, de acuerdo a los procedimientos. Realizar Check List.								
2º)	Si existe buena aislación, y previa verificación de correlación punzar con cañón de 4" a 4 TPP 32 grs. (0° - 90°)								
	Inducción				Neutrón				
	1050,0/52,5								
2º)	Bajar conjunto de Tpn y Pkr								
	Ensayar A por pistoneo, hasta estabilizar Q. , N. , IT.								
3º)	Efectuar ensayo TST, con Cía S.A.P. Ver programa adjunto.								
	Sacar Tpn y Pkr								
4º)	Punzar c/4" - 4 TPP - 32 grs. (0° - 90°)								
	Inducción				Neutrón				
	1043,0/45,5								
5º)	Bajar conjunto de Tpn y Pkr								
6º)	Ensayar B por pistoneo, hasta estabilizar Q. , N. , IT.								
8º)	De acuerdo a los resultados se indicará programa a seguir.								
	NOTA:								
	Si la zona resulta S/E, probar admisión y reensayar.								
	En caso de extraer hidrocarburos, tomar muestra para análisis y enviar a Epsilon.								
	En caso de ser Gas, medir presiones y tomar muestra.								
	Ensayar a bajo régimen para minimizar el aporte de arena								
	De acuerdo al resultado los ensayos se determinará programa a seguir.								
	Capas con porcentajes de agua mayores a 50 %, consultar antes de dar por finalizado el ensayo.								





CLIENTE : **REPSOL-YPF S.A.**
YACIMIENTO : **GRIMBEEK**
POZO : **YPF.Ch.Gbk-736**
PUNZADOS : **1050/1052.5 m**
FECHA : **22-SEPT-2007**

ENSAYO DE FORMACIÓN

MEMORY GAUGE Y CIERRE EN FONDO

**SERVICIO DE INTERPRETACIÓN DE ENSAYO DE FORMACIÓN
WIRE LINE & TESTING - NEUQUÉN - ARGENTINA**



OHSAS
18001

ISO
14001

Este informe ha sido realizado con el apoyo de programas que usan modelos matemáticos, basados en información suministrada por el cliente, que generan resultados, los cuales pueden ser ó no correctos .
En función de lo anterior, San Antonio no se responsabiliza por las acciones que se tomen, basadas en su interpretación.

INFORME DE ENSAYO DE FORMACIÓN

YACIMIENTO : GRIMBEEK
POZO : YPF.Ch.Gbk-736
ZONA : 1050/1052.5 m
PROF. TPN : 1104 m
PROF. PACKER : 1039 m
PROF. MEDICIÓN : 1036 m

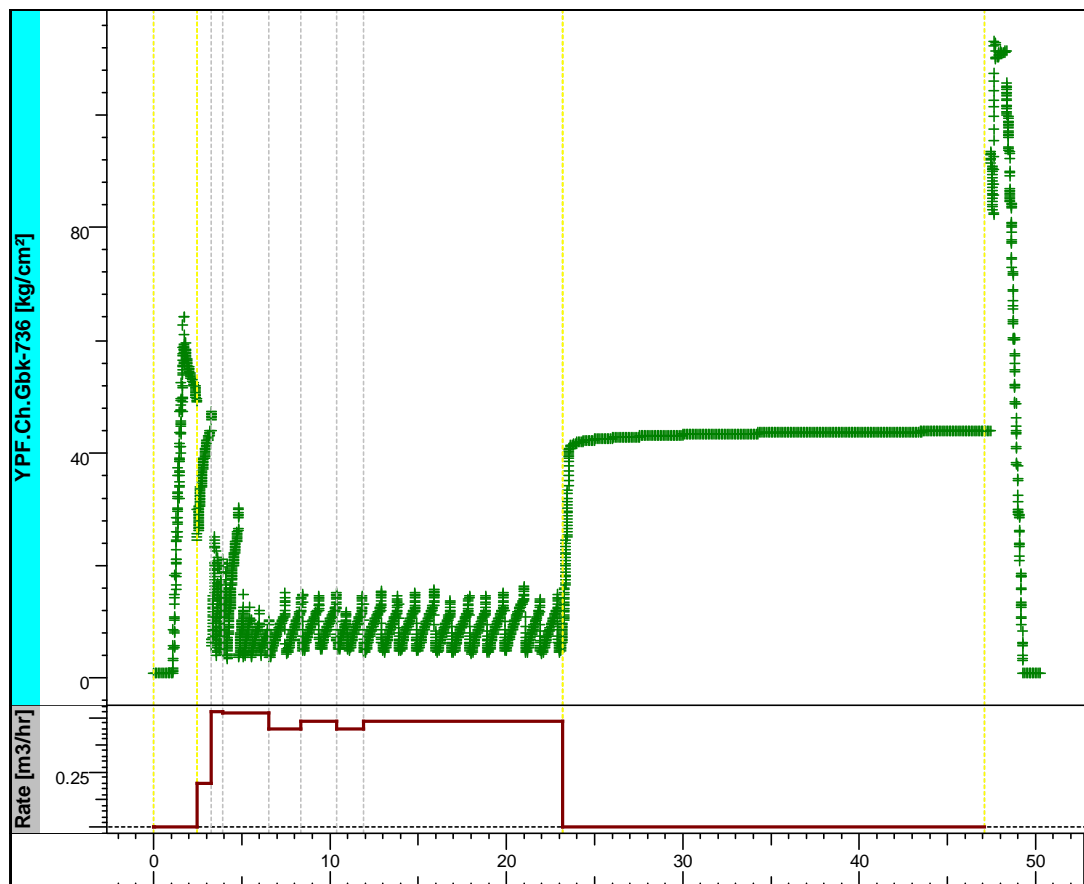
I. INTRODUCCIÓN

Se bajó sarta TST con sensor de memoria, para ensayo de formación. Este consistió en registrar presiones, de 20.5h de pistoneo y 24h de cierre de pozo en fondo.

El aporte de la capa se estabilizó en 560 lt/h, 14% agua.

La presión al final del cierre alcanzó 43.85 kg/cm².

Gráfico Lineal de Historia de Presiones



Pressure [kg/cm²], Liquid Rate [m³/hr] vs Time [hr]

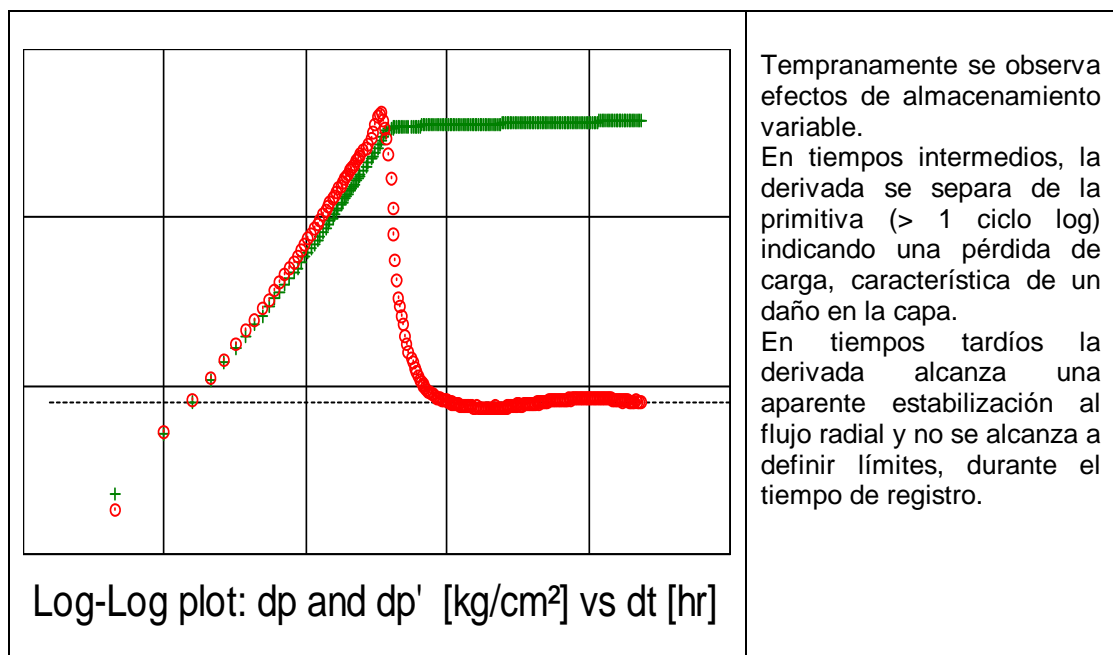
El modelo usado en la simulación es el de **Reservorio Homogéneo e Infinito**.
En el análisis se consideró petróleo como fluido predominante.

Los principales resultados obtenidos son :

PARÁMETROS	RESULTADOS
Presión Extrapolada Pi	44.43kg/cm ²
Transmisibilidad kh/uo (uo=36 cp)	141.4 md.m/cp
Permeabilidad k	3390 md
Daño S	16
Radio de Investigación Rinv	213m

II. ANÁLISIS

El análisis se realizó empleando el soft de interpretación **Saphir v4.02.05**.



Datos Básicos de la capa

Well Radius:	<input type="text" value="3.6"/>	<input type="text" value="in"/>
Pay Zone:	<input type="text" value="1.5"/>	<input type="text" value="m"/>
Porosity:	<input type="text" value="0.35"/>	

Datos PVT

El valor de viscosidad fue tomado de PVT de Grimbeek Cañadón Botella.
Los datos fueron calculados mediante correlaciones a P y T medidos en registro.

Temperature	58.1611	°C
Pressure	43.85	kg/cm ²
Properties @ Reservoir T&P		
Oil		
Bo	1.0274	B/STB
co	1.01198E-5	psi-1
Muo	36.0381	cp
Rhoo	0.92466	g/cc
Water		
Bw	1.01321	B/STB
cw	3.09754E-6	psi-1
Muw	0.526657	cp
Rhow	0.989618	g/cc

Caudales de Producción

Se realizó simulación de dinámica considerando los caudales de petróleo.

Duration	Liquid Rate
hr	m3/hr
2.50556	0
0.780277	0.2
0.617836	0.53
2.65832	0.52
1.85204	0.45
2.00000	0.48
1.50248	0.45
11.2790	0.48
23.9500	0

Al final del presente informe se adjunta interpretación con programa Saphir.

Ing. Martha Vergara
Servicio de Interpretación de Ensayos
Wireline & Testing – San Antonio S.A.



Main Results

ANÁLISIS

Company REPSOL-YPF S.A.
Well YPF.Ch.Gbk-736

Field GRIMBEEK
Test Name / # TST CON CIERRE EN FONDO

Test date / time 21 al 23-SEPT-2007
Formation interval
Perforated interval 1050/1052.5m
Gauge type / # ML # 6012
Gauge depth 1036 m.b.b.p.

TEST TYPE Standard

Porosity Phi (%) 35
Well Radius rw 0.09144 m
Pay Zone h 1.5 m

Water Salt (ppm) 3500
Form. compr. 3E-6 psi-1
So 0.7
Sg 0
Sw 0.3
Reservoir T 58.1611 °C
Reservoir P 43.85 kg/cm²

FLUID TYPE Oil

Volume Factor B 1.0274 B/STB
Viscosity 36.0381 cp
Total Compr. ct 1.10131E-5 psi-1

Selected Model

Model Option Standard Model
Well Vertical, Changing Storage (Hegeman)
Reservoir Homogeneous
Boundary Infinite

Main Model Parameters

TMatch 326 1/hr
PMatch 0.626 1/[kg/cm²]
C 4.19E-4 bbl/psi
Total Skin 16.2
k.h, total 5090 md.m
k, average 3390 md
Pi 44.4355 kg/cm²

Model Parameters

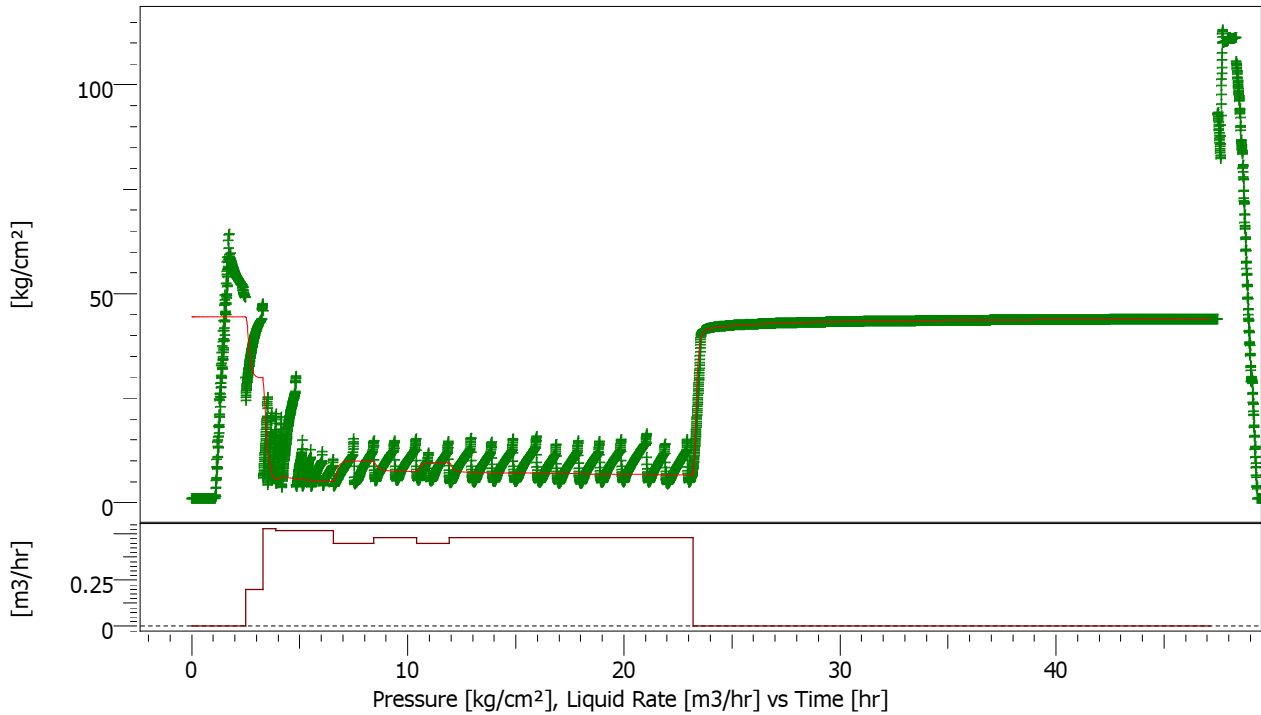
Well & Wellbore parameters (YPF.Ch.Gbk-736)
C 4.19E-4 bbl/psi
Ci/Cf 10
Alpha 8400
Skin 16.2

Reservoir & Boundary parameters

Pi 44.4355 kg/cm²
k.h 5090 md.m
k 3390 md

Derived & Secondary Parameters

Rinv 213 m
Test. Vol. 0.00264636 bcf
Delta P (Total Skin) 25.8607 kg/cm²
Delta P Ratio (Total Skin) 0.692841 Fraction



YPF.Ch.Gbk-736 build-up #1

Rate 0 m3/hr
Rate change 0.48 m3/hr
P@dt=0 6.61659 kg/cm²
Pi 44.4355 kg/cm²
Smoothing 0.1

Selected Model
Model Option Standard Model
Well Vertical, Changing Storage (Hegeman)
Reservoir Homogeneous
Boundary Infinite

Main Model Parameters

TMatch 326 1/hr
PMatch 0.626 1/[kg/cm²]
C 4.19E-4 bbl/psi
Total Skin 16.2
k.h, total 5090 md.m
k, average 3390 md
Pi 44.4355 kg/cm²

Model Parameters

Well & Wellbore parameters (YPF.Ch.Gbk-736)
C 4.19E-4 bbl/psi
Ci/Cf 10
Alpha 8400
Skin 16.2

Reservoir & Boundary parameters

Pi 44.4355 kg/cm²
k.h 5090 md.m
k 3390 md

Derived & Secondary Parameters

Rinv 213 m
Test. Vol. 0.00264636 bcf
Delta P (Total Skin) 25.8607 kg/cm²
Delta P Ratio (Total Skin) 0.692841 Fraction

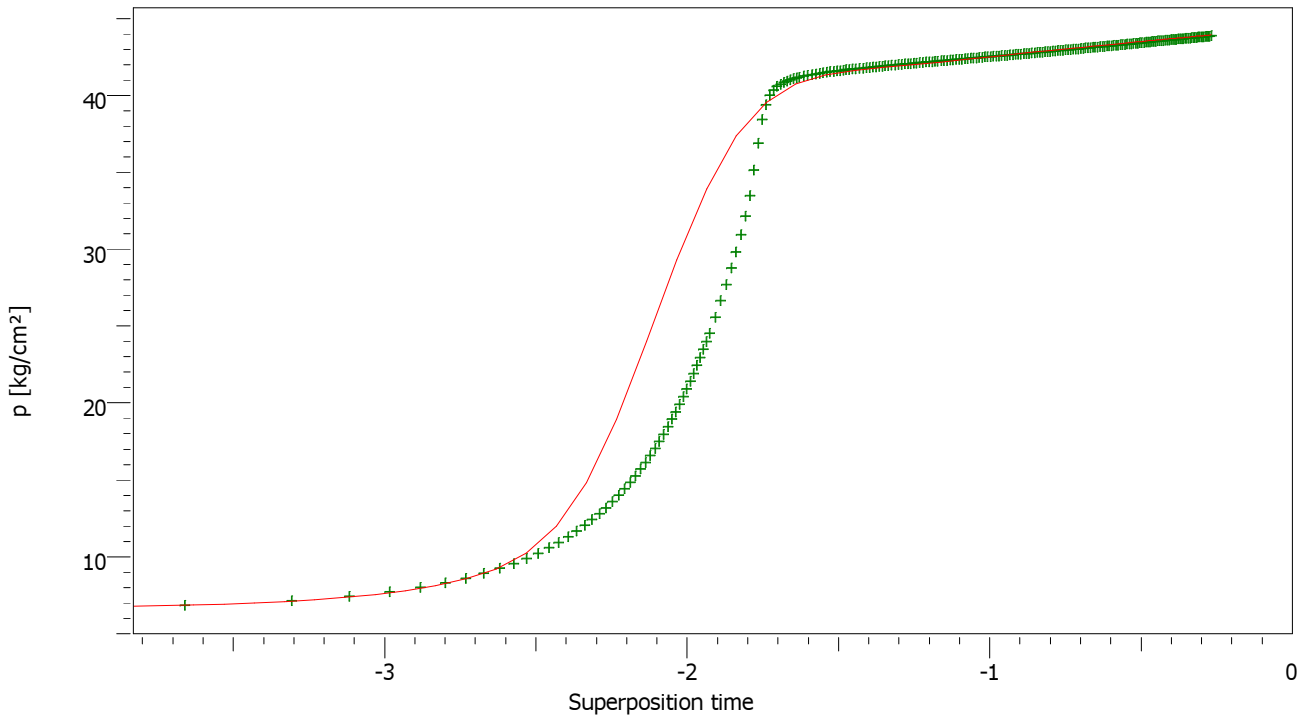


Semi-Log plot

ANÁLISIS

Company REPSOL-YPF S.A.
Well YPF.Ch.Gbk-736

Field GRIMBEEK
Test Name / # TST CON CIERRE EN FONDO



YPF.Ch.Gbk-736 build-up #1

Rate 0 m3/hr
Rate change 0.48 m3/hr
P@dt=0 6.61659 kg/cm²
Pi 44.4355 kg/cm²
Smoothing 0.1

Selected Model

Model Option Standard Model
Well Vertical, Changing Storage (Hegeman)
Reservoir Homogeneous
Boundary Infinite

Main Model Parameters

TMatch 326 1/hr
PMatch 0.626 1/[kg/cm²]
C 4.19E-4 bbl/psi
Total Skin 16.2
k.h, total 5090 md.m
k, average 3390 md
Pi 44.4355 kg/cm²

Model Parameters

Well & Wellbore parameters (YPF.Ch.Gbk-736)
C 4.19E-4 bbl/psi
Ci/Cf 10
Alpha 8400
Skin 16.2

Reservoir & Boundary parameters

Pi 44.4355 kg/cm²
k.h 5090 md.m
k 3390 md

Derived & Secondary Parameters

Rinv 213 m
Test. Vol. 0.00264636 bcf
Delta P (Total Skin) 25.8607 kg/cm²
Delta P Ratio (Total Skin) 0.692841 Fraction

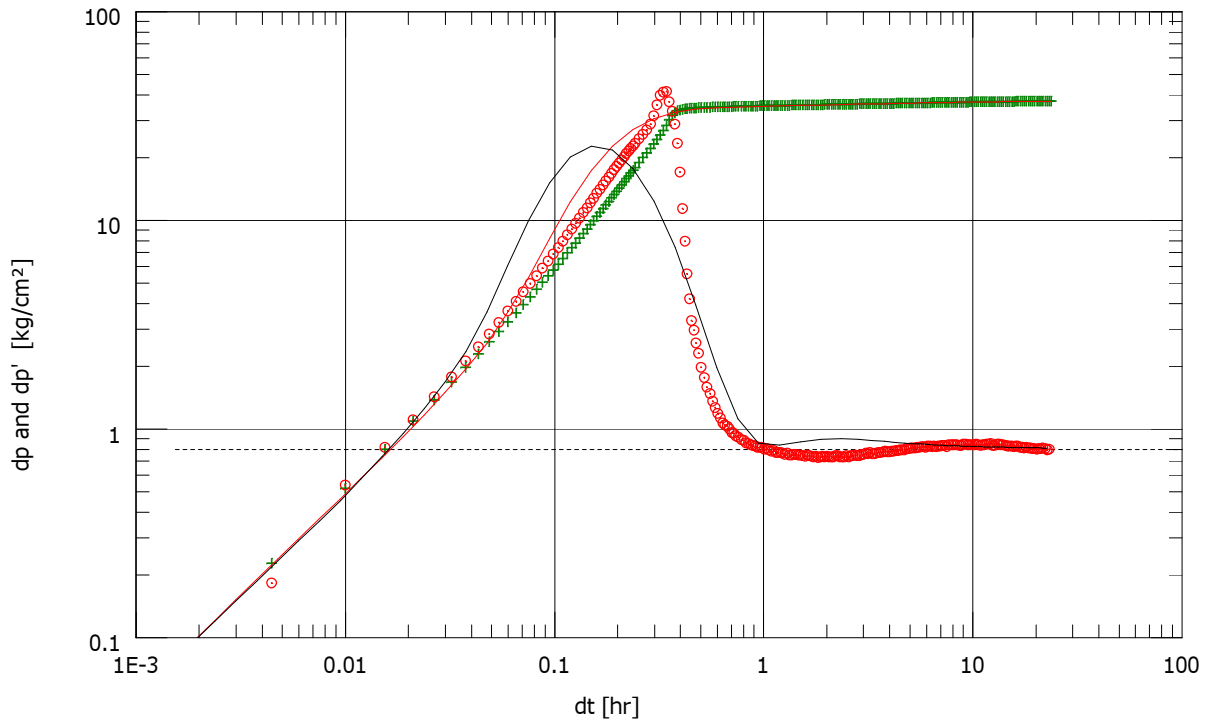


Log-Log plot

ANÁLISIS

Company REPSOL-YPF S.A.
Well YPF.Ch.Gbk-736

Field GRIMBEEK
Test Name / # TST CON CIERRE EN FONDO



YPF.Ch.Gbk-736 build-up #1

Rate 0 m3/hr
Rate change 0.48 m3/hr
P@dt=0 6.61659 kg/cm²
Pi 44.4355 kg/cm²
Smoothing 0.1

Selected Model

Model Option Standard Model
Well Vertical, Changing Storage (Hegeman)
Reservoir Homogeneous
Boundary Infinite

Main Model Parameters

TMatch 326 1/hr
PMatch 0.626 1/[kg/cm²]
C 4.19E-4 bbl/psi
Total Skin 16.2
k.h, total 5090 md.m
k, average 3390 md
Pi 44.4355 kg/cm²

Model Parameters

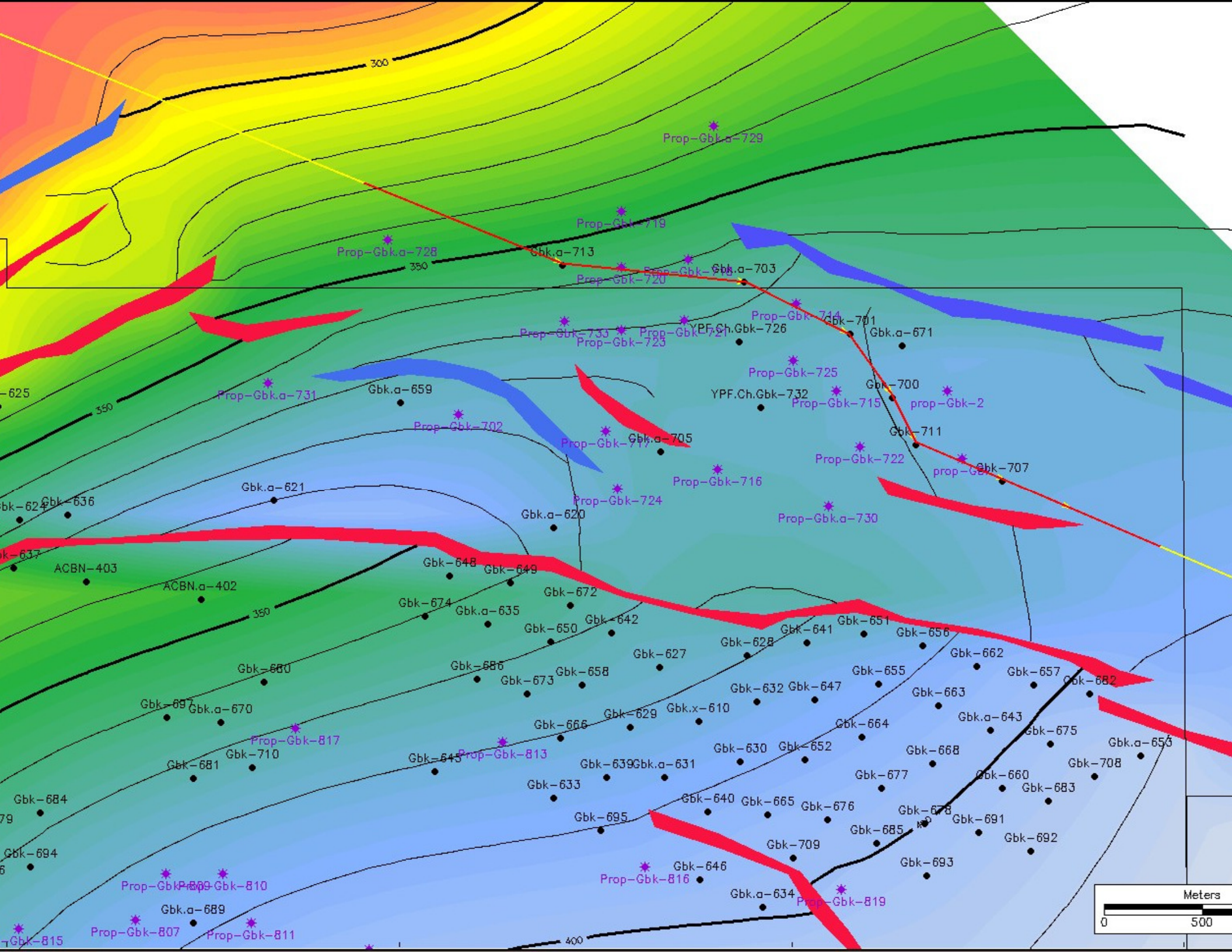
Well & Wellbore parameters (YPF.Ch.Gbk-736)
C 4.19E-4 bbl/psi
Ci/Cf 10
Alpha 8400
Skin 16.2

Reservoir & Boundary parameters

Pi 44.4355 kg/cm²
k.h 5090 md.m
k 3390 md

Derived & Secondary Parameters

Rinv 213 m
Test. Vol. 0.00264636 bcf
Delta P (Total Skin) 25.8607 kg/cm²
Delta P Ratio (Total Skin) 0.692841 Fraction





POSICIONAMIENTO SATELITAL - G.P.S.
 UBICACION Y TRIANGULACION DE POZOS
 REPLANTEOS GENERALES, OLEODUCTOS
 GASODUCTOS, SISMICAS, MENSURAS, ETC...

J.D. s.r.l. - SERVICIOS TOPOGRAFICOS

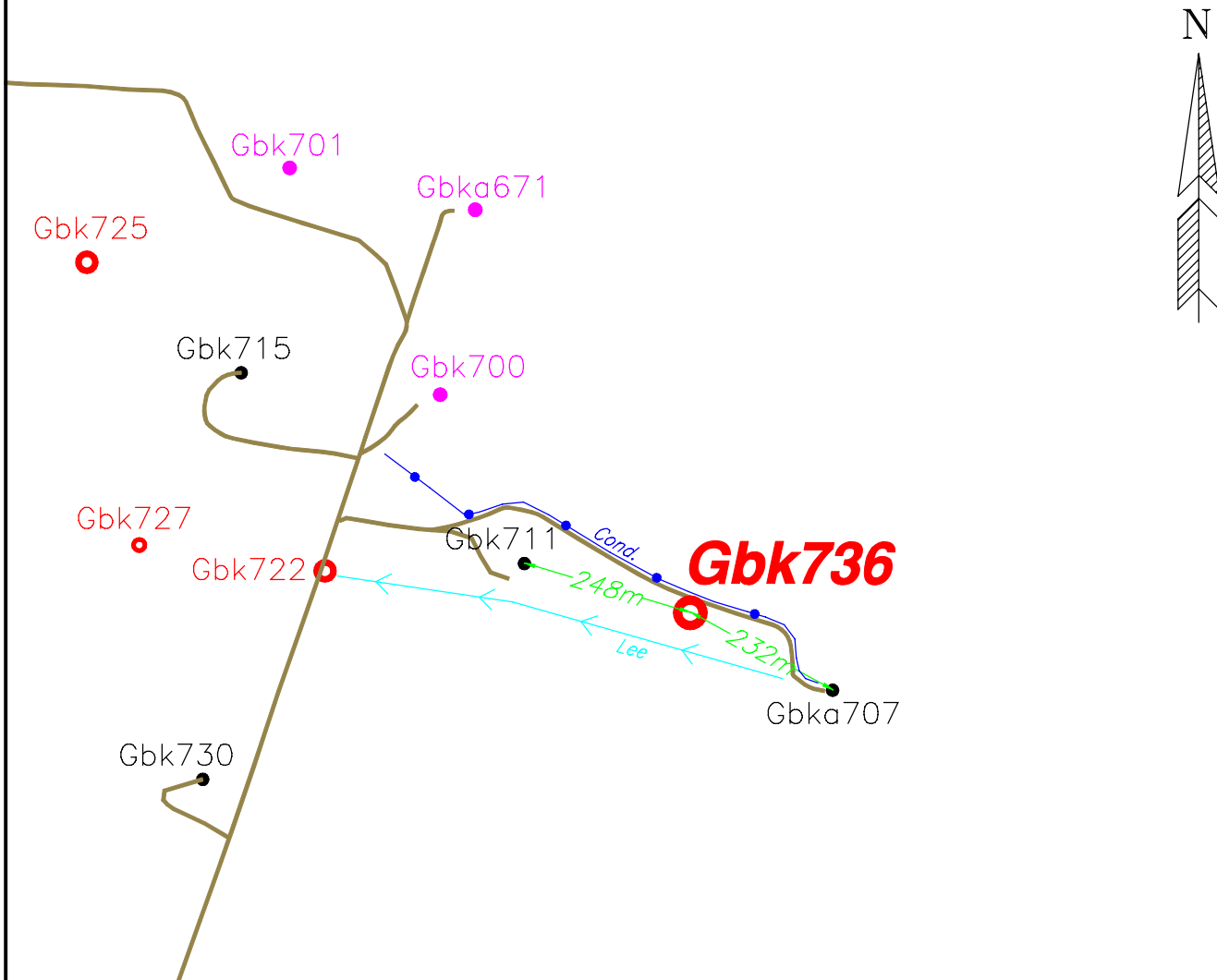
Av. Sargento Cabral 162 - TE(fax): 0297/447-1105
 9000 - Comodoro Rivadavia - Chubut
 E-mail: jdsrl@infovia.com.ar / jd-srl@satlink.com

MONOGRAFIA

CONTRATO: **REPSOL-YPF**
 YACIMIENTO: **MANANTIALES BEHR**
 AREA: **GRIMBEEK**
 PROVINCIA: **CHUBUT**

CROQUIS DE UBICACION: **Gbk-736**

ESCALA APROX.
 1 / 10.000



OBSERVACIONES: LOTE: 40 PROPIETARIO: SUC. LARI SADLEIR

UBICADO EN TERRENO PLANO, L. ELECTRICA 55m AL SUR, CONDUCCION 28m AL NORTE
 CAMINO 22m AL NORTE QUE VA AL Gbk-707

AZIMUT DE ARRANQUE:

SE NAVEGO EL POZO A LAS COORDENADAS
 TEORICAS CON GPS COLOCANDO LA ESTACA
 EN LAS COORDENADAS SOLICITADAS

COMPAÑIA: **REPSOL-YPF**

COORDENADAS: **TEORICAS GRAFICAS**

SISTEMA: **PAMPA DEL CASTILLO**

Gbk-736

X: 4951723.- Y: 2596869.-
 COTA: T/N Aprox.: 643m +/- 3m

COORDENADAS GEOGRAFICAS:(Sistema:

LAT: _____ LON: _____ ELEV: _____

UBICADO POR JD SRL-AV. SGTO CABRAL 162-TE(fax)0297/4471105
 9000 - COMODORO RIVADAVIA - CHUBUT - REPUBLICA ARGENTINA

OPERADOR: S. VELASQUEZ REVISO: JD

REMITO N°

FECHA: 16 de ABRIL de 2007



Comments

Analysis 1

Company REPSOL-YPF S.A.
Well YPF.Ch.Gbk-736Field GRIMBEEK
Test Name / # TST CON CIERRE EN FONDO

DIAGNÓSTICO

- Almacenamiento variable (deformación inicial de la derivada)
- Separación de derivada y primitiva > 1 ciclo log (equivalente a daño en la capa)
- Tendencia a flujo radial (horizontal de la derivada)

ANÁLISIS

Se adoptó un modelo de Pozo Vertical en un Reservorio Homogéneo e Infinito

Asumiendo una $u_o = 36$ cp, se obtiene una $k = 3390$ mD; valor susceptible de variación si ajustamos la viscosidad del petróleo.

Los principales resultados son los siguientes:

$P_i = 44.43$ kg/cm²

$k_h = 5090$ md.m

Skin = 16.2

Rinv = 213m



Main Results

Analysis 1

Company REPSOL-YPF S.A.
Well YPF.Ch.Gbk-736

Field GRIMBEEK
Test Name / # TST CON CIERRE EN FONDO

Test date / time 21 al 23-SEPT-2007
Formation interval
Perforated interval 1050/1052.5m
Gauge type / # ML # 6012
Gauge depth 1036 m.b.b.p.

TEST TYPE Standard

Porosity Phi (%) 35
Well Radius rw 0.09144 m
Pay Zone h 1.5 m

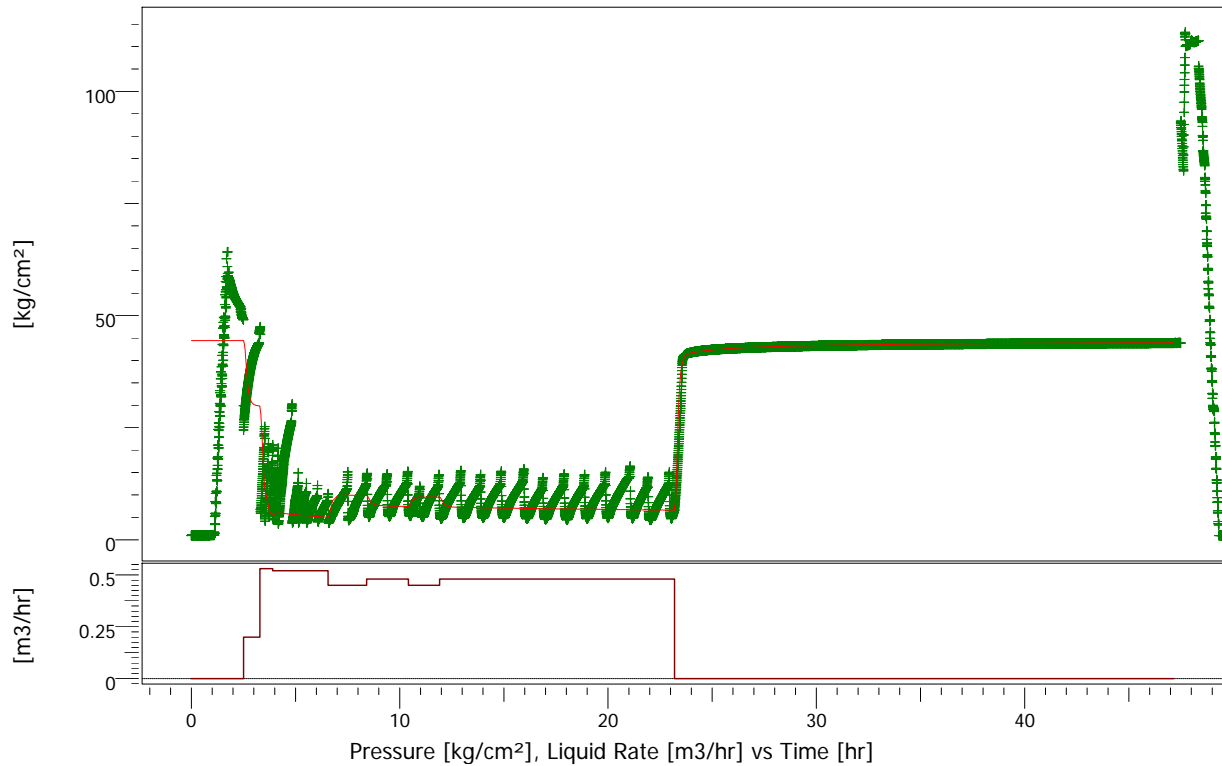
Water Salt (ppm) 3500
Form. compr. 3E-6 psi-1
So 0.7
Sg 0
Sw 0.3
Reservoir T 58.1611 °C
Reservoir P 43.85 kg/cm²

FLUID TYPE Oil

Volume Factor B 1.0274 B/STB
Viscosity 36.0381 cp
Total Compr. ct 1.10131E-5 psi-1

Selected Model
Model Option Standard Model
Well Storage + Skin
WBS Type Changing
Reservoir Homogeneous
Boundary Infinite

Results
TMatch 326 [hr]**-1
PMatch 0.626 [kg/cm²]**-1
C 4.19E-4 bbl/psi
Ci/Cf 10
Alpha 8400
Skin 16.2
Delta P Skin 25.8607 kg/cm²
Pi 44.4355 kg/cm²
k.h 5090 md.m
k 3390 md
Rinv 213 m
Test. Vol. 74936.6 m3

Company REPSOL-YPF S.A.
Well YPF.Ch.Gbk-736Field GRIMBEEK
Test Name / # TST CON CIERRE EN FONDO

— Oil rate

6012 GBK 736 build-up #1
Rate 0 m³/hr
Rate change 0.48 m³/hr
P@dt=0 6.61659 kg/cm²
Pi 44.4355 kg/cm²
Smoothing 0.1

Selected Model

Model Option Standard Model
Well Storage + Skin
WBS Type Changing
Reservoir Homogeneous
Boundary Infinite

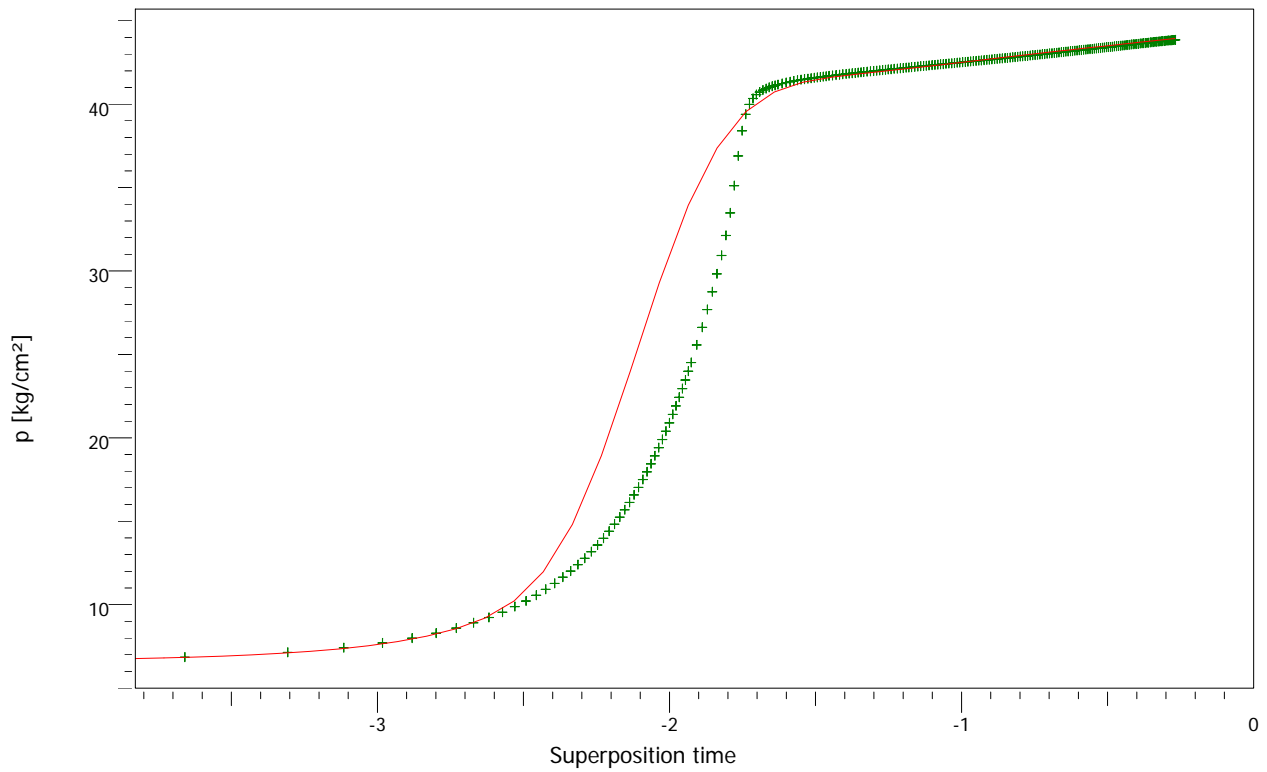
Results

TMatch 326 [hr]**-1
PMatch 0.626 [kg/cm²]**-1
C 4.19E-4 bbl/psi
Ci/Cf 10
Alpha 8400
Skin 16.2
Delta P Skin 25.8607 kg/cm²
Pi 44.4355 kg/cm²
k.h 5090 md.m
k 3390 md
Rinv 213 m
Test. Vol. 74936.6 m³



Semi-Log plot

Analysis 1

Company REPSOL-YPF S.A.
Well YPF.Ch.Gbk-736Field GRIMBEEK
Test Name / # TST CON CIERRE EN FONDO

6012 GBK 736 build-up #1
Rate 0 m3/hr
Rate change 0.48 m3/hr
P@dt=0 6.61659 kg/cm²
Pi 44.4355 kg/cm²
Smoothing 0.1

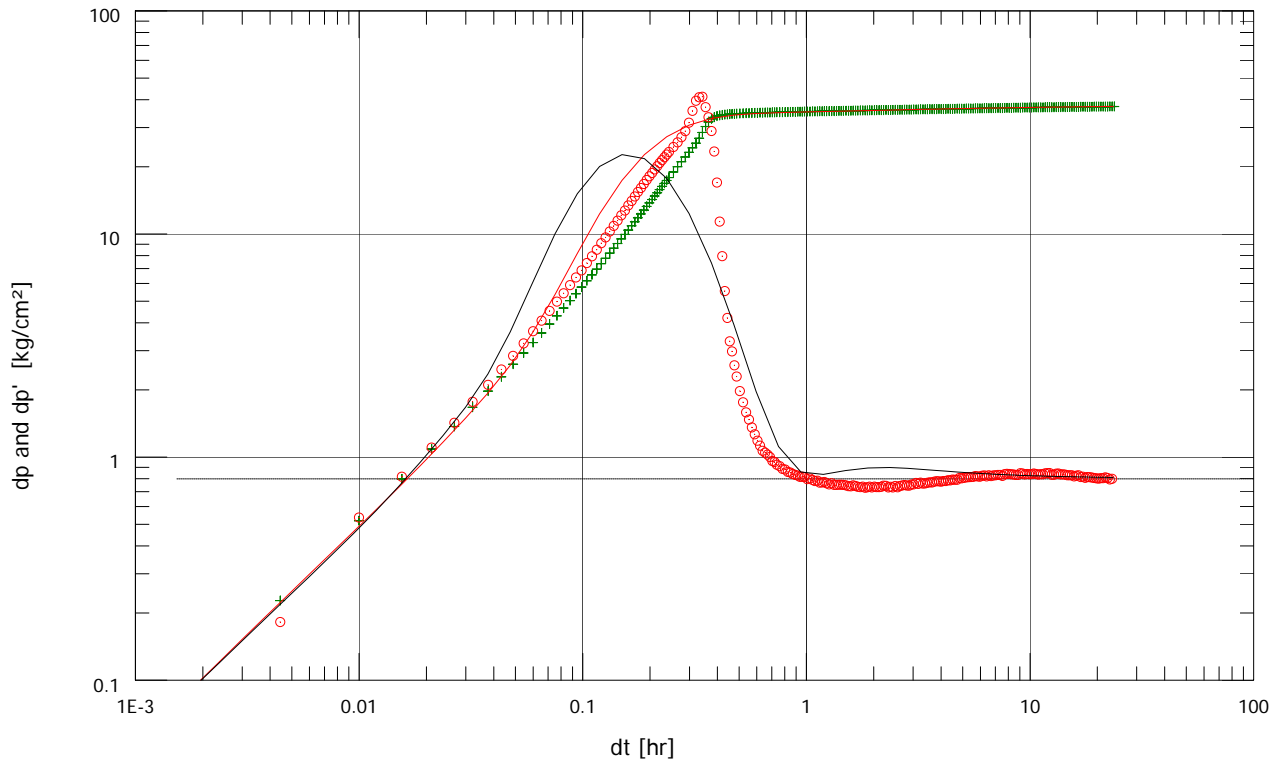
Selected Model
Model Option Standard Model
Well Storage + Skin
WBS Type Changing
Reservoir Homogeneous
Boundary Infinite

Results
TMatch 326 [hr]**-1
PMatch 0.626 [kg/cm²]**-1
C 4.19E-4 bbl/psi
Ci/Cf 10
Alpha 8400
Skin 16.2
Delta P Skin 25.8607 kg/cm²
Pi 44.4355 kg/cm²
k.h 5090 md.m
k 3390 md
Rinv 213 m
Test. Vol. 74936.6 m3



Log-Log plot

Analysis 1

Company REPSOL-YPF S.A.
Well YPF.Ch.Gbk-736Field GRIMBEEK
Test Name / # TST CON CIERRE EN FONDO

6012 GBK 736 build-up #1
Rate 0 m3/hr
Rate change 0.48 m3/hr
P@dt=0 6.61659 kg/cm²
Pi 44.4355 kg/cm²
Smoothing 0.1

Selected Model
Model Option Standard Model
Well Storage + Skin
WBS Type Changing
Reservoir Homogeneous
Boundary Infinite

Results
TMatch 326 [hr]**-1
PMatch 0.626 [kg/cm²]**-1
C 4.19E-4 bbl/psi
Ci/Cf 10
Alpha 8400
Skin 16.2
Delta P Skin 25.8607 kg/cm²
Pi 44.4355 kg/cm²
k.h 5090 md.m
k 3390 md
Rinv 213 m
Test. Vol. 74936.6 m3

Ensayo TST pozo Gbk.736

Objetivos:

- a) Presión estática de la capa A30 (confirmar datos de XPT)
- b) Kh y Daño.

Programa Operativo capa A 30:

- 1) Bajar TPN y PKR con conjunto de ensayo TST y cierre en fondo.
- 2) Fijar TPN en 1110 mbbp para ensayo (probar por presión y por pistoneo).-
- 3) Fijar Packer en 1040 mbbp. (verificar hermeticidad por inversa),
- 4) A continuación ensayar según la siguiente secuencia:
 - a) Fluencia por 12 horas con caudal y nivel estabilizado. Fluencia en su máximo potencial (evitar que se quede sin nivel).
 - b) Cierre durante 24 horas
- 5) Librar PKR, pescar TPN y sacar conjunto.-

Datos de pozo:

Punzados: 1050,0/1052,5 mbbp
rw: perforado c/ trépano 8 3/4", entubado c/CSG 5 1/2".-
h: 1,5 m (leídos sobre densidad)
fi: 35% (leídos sobre densidad)
k: 970 md (estimado)
Temp = 55°C (Temperatura de fondo)
Pe: 648,94 psi (XPT); 45,63 Kg/cm2.

COMPANIA: YPF S.A.

POZO: YPF.Ch.Gbk-761

CAMPO: GRIMBEEK

PROVINCIA: CHUBUT

PAIS: ARGENTINA

Schlumberger

COMBINADA

ESCALA: 1/200

AIT-LDL-BHC-CNL-CAL
XPT / MRX

Elev.: B.V. 655.55 m
N. T. 649.75 m
M. R. 655.25 m

Ref. Permanente: NIVEL DEL TERRENO Elev.: 649.75 m
Reg. Medido Desde: NIVEL DEL TERRENO 0.0 m sobre nivel ref.
Perforacion Medida Desde: NIVEL DEL TERRENO

UWI:
AR0100007663

Equipo
PI-382

Longitud
X: 4.952.293,10

Latitud
Y: 2.596.846,29

Provincia: CHUBUT
Campo: GRIMBEEK
Locacion: ARCS
Pozo: YPF.Ch.Gbk-761
Compania: YPF S.A.

LOCACION

Fecha	30-Sep-2008
Corrida No.	1
Prof. Perforador	1201 m
Prof. Registro	1202 m
Primera Lectura	1199.6 m
Ultima Lectura	357 m
Fondo Tuberia Perforador	9.625 in @ 358.13 m @
Fondo Tuberia Registro	357 m
Diametro Trepano	8.750 in
Tipo De Lodo	POLIMERICO - PHPA
Densidad	1.15 g/cm3
Viscosidad	48 s
Perdidas	PH 6 cm3 8
Fuente Muestra De Lodo	PILETA
RM @ Temp.	1.340 ohm.m @ 23 degC @
RMF @ Temp.	1.140 ohm.m @ 22 degC @
RMC @ Temp.	1.700 ohm.m @ 24 degC @
Fuente: RMF	RMC PRENSA PRENSA
RM @ T. Fdo.	RMF @ T. Fdo. 0.790 @ 54 0.663 @ 54 @ @
Temp. Maxima Medida	54 degC
Circulacion Final	Hora 30-Sep-2008 6:00
Registro Fondo	Hora 30-Sep-2008 14:10
Unidad No.	Locacion 3122 ARCS
Registrado por:	EUGENIO DIAZ
Testigo	CARINA CEVASCO

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

Run 1

Run 2

Run

LIMITACION DE RESPONSABILIDAD

LA UTILIZACION Y CONFIANZA EN LOS DATOS AQUI GRABADOS POR PARTE DE LA NOMBRADA COMPANIA (Y POR CUALQUIERA DE SUS SUBSIDIARIAS, AFILIADAS, REPRESENTANTES, AGENTES, CONSULTORES Y EMPLEADOS) ESTA SUJETA A LOS TERMINOS Y CONDICIONES ACORDADOS ENTRE SCHLUMBERGER Y LA COMPANIA, INCLUYENDO: (a) RESTRICCIONES EN EL USO DE LOS DATOS GRABADOS; (b) LIMITACION DE RESPONSABILIDAD Y REVOCACION DE GARANTIAS EN RELACION A LA UTILIZACION Y CONFIANZA EN LOS DATOS GRABADOS POR PARTE DE LA COMPANIA, Y (c) LA SOLA Y TOTAL RESPONSABILIDAD DEL CLIENTE POR CUALQUIER INTERPRETACION HECHA O DECISION BASADA EN EL USO DE ESTOS DATOS.

OTROS SERVICIOS # 1

OS1: AIT-LDL-BHC-CNL-CAI
OS2: XPT / MRX
OS3:
OS4:
OS5: PI-382

OTROS SERVICIOS # 2

OS1:
OS2:
OS3:
OS4:
OS5:

OBSERVACIONES: CORRIDA # 1

OBSERVACIONES: CORRIDA # 2

1. Primera carrera en el pozo y perfil de referencia de profundidad.
2. Esquema del pozo segun datos del perforador.
3. Coordenadas definitivas.
4. Herramienta corrida segun diagrama.
5. Maxima temperatura registrada 54degC desde termometro en punta de herramienta.
6. Datos adicionales del lodo: Cl = 1000ppm, Ca = 180ppm.
7. Maxima desviacion del pozo: 1deg segun datos del perforador.
8. Ultima circulacion termino el dia 30-SET-2008 a las 6:00hs y duro 1hs.
9. FPHI= SPHI, FNUM = 0.81, y FEXP =2 utilizados el calculo de RWA.
10. Lecturas de LDL y BHC afectadas en zonas de mal caliper.
11. AIT y DSLT corridos descentralizados usando standoffs de 1.5".
12. Repetibilidad afectada en zonas de mal caliper.
13. LDL, CNL y BHC corrido hasta 775m a pedido del cliente.

CORRIDA #1

CORRIDA #2

ORDEN DE SERVICIO:
VERSION DEL PROGRAMA: 16C0-147
NIVEL DEL LODO: 0 m

ORDEN DE SERVICIO:
VERSION DEL PROGRAMA:
NIVEL DEL LODO:

INTERVALO REGISTRADO	COMIENZO	FINAL	INTERVALO REGISTRADO	COMIENZO	FINAL

DESCRIPCION DEL EQUIPO

CORRIDA # 1

CORRIDA # 2

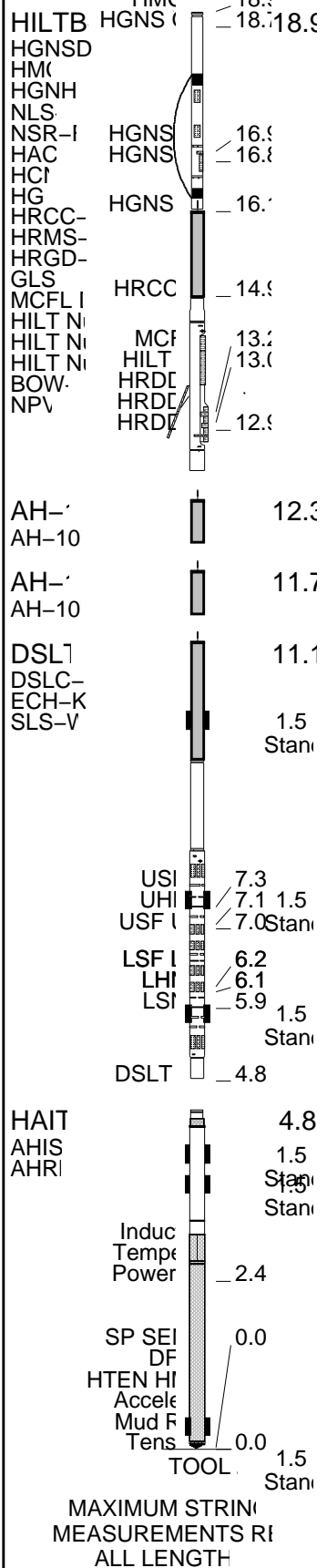
SURFACE I

GSR-U WITM (
NCT
CNB
NCS

DOWNHOLE

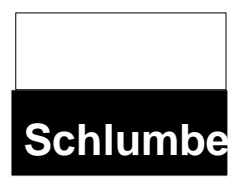
LEH- 20.7
LEH- 

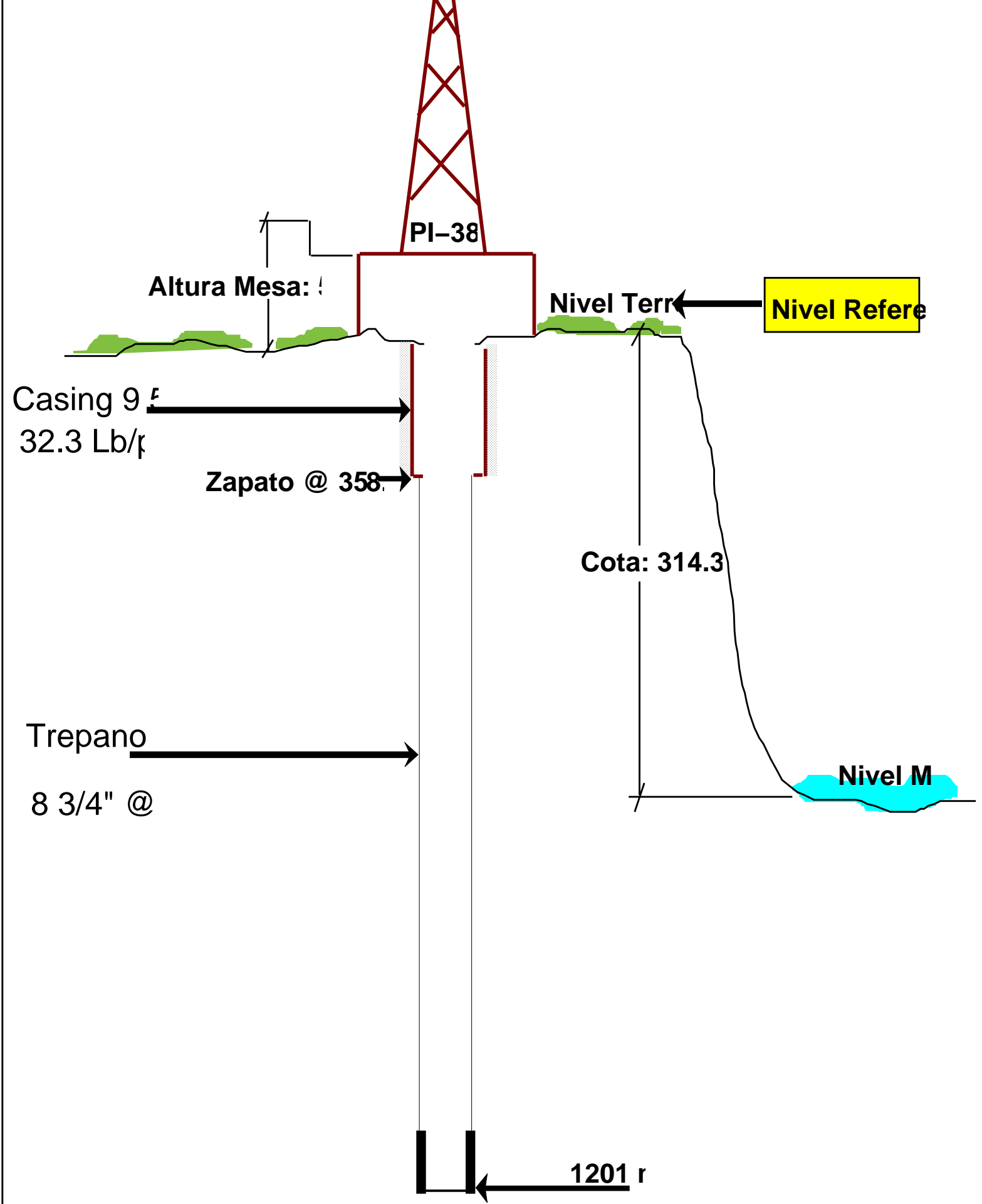
DTC 19.6
ECH-Ki 19.5
DTCH0 18.5
HGNS 18.5
HMC 



MAXIMUM STRAIN
MEASUREMENTS RE
ALL LENGTH

YPF.Ch.Gbk





Schlumberger

TRAMO PRINCIPAL

MAXIS Field Log

Input DLIS Files

DEFAULT	MRX_AIT_SONIC_TLD_061PUP	FN:108	PRODUCER	30-Sep-2008 23:49	1203.4 M	337.1 M
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Output DLIS Files

DEFAULT	MRX_AIT_SONIC_TLD_063PUP	FN:110	PRODUCER	30-Sep-2008 23:53	1203.4 M	337.1 M
CLIENTE_MRX	MRX_AIT_SONIC_TLD_063PUC	FN:111	CUSTOMER	30-Sep-2008 23:53	1203.4 M	337.1 M

Integrated Hole/Cement Volume Summary

Hole Volume = 6.20 M3

Cement Volume = 6.20 M3 (assuming 5.50 IN casing O.D.)

Computed from 899.8 M to 740.2 M using data channel(s) BS

MRX-C
HAIT-H
HILTB-FTB

SPC-3649-MRXKit17
SRPC-3624-Q2_2008_OP16
SRPC-3624-Q2_2008_OP16

EDTC-B
DSLTH-H
DTC-H

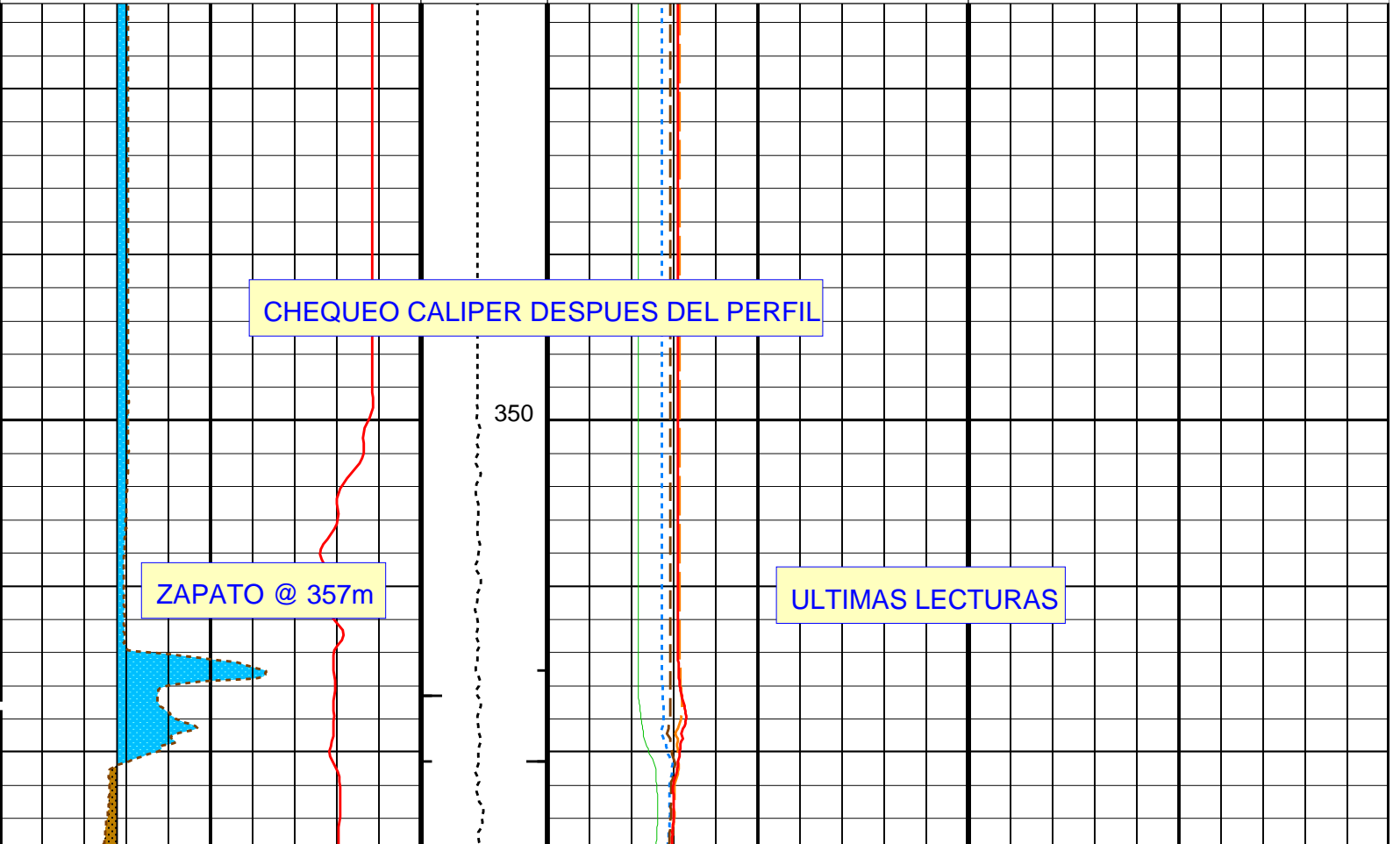
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16C0-147
16C0-147

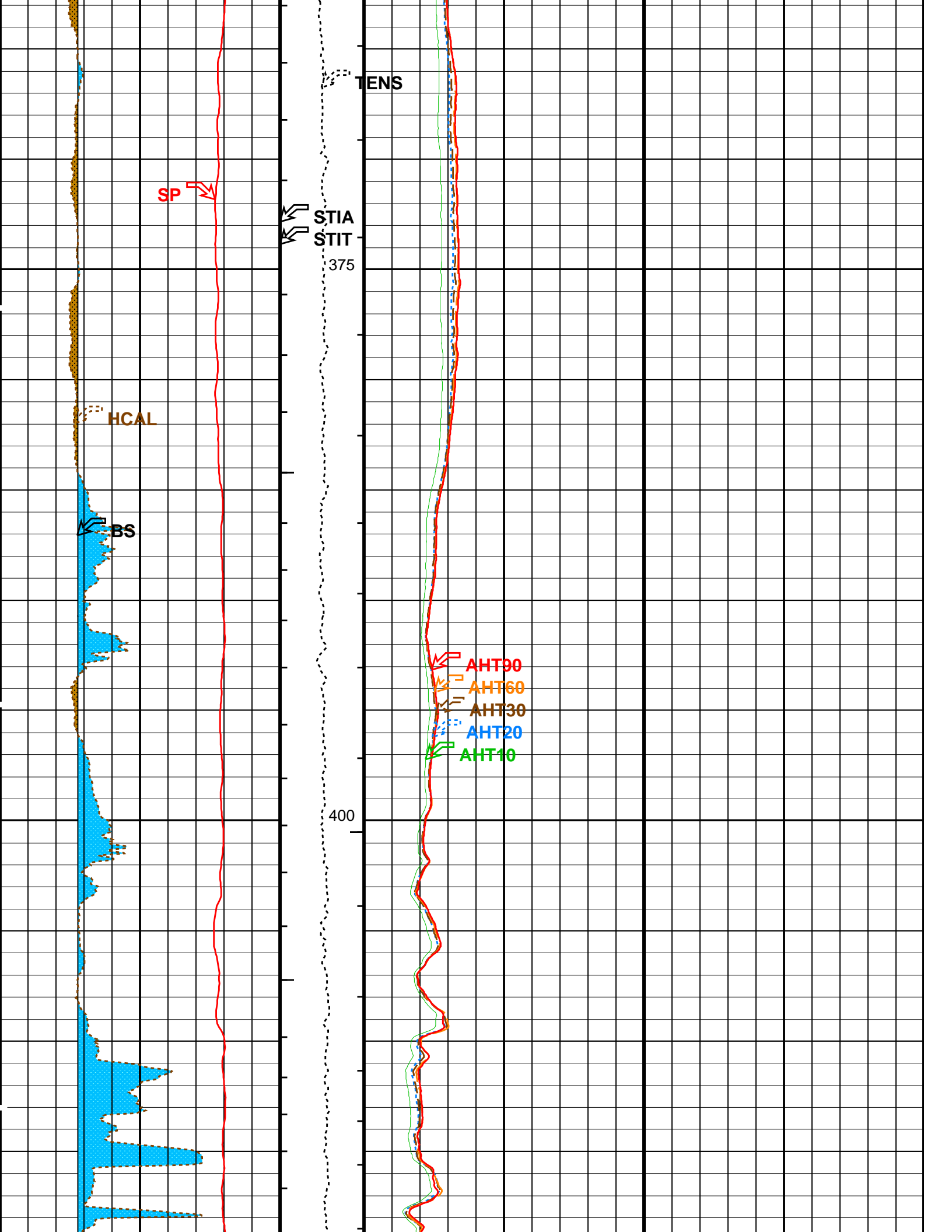
PIP SUMMARY

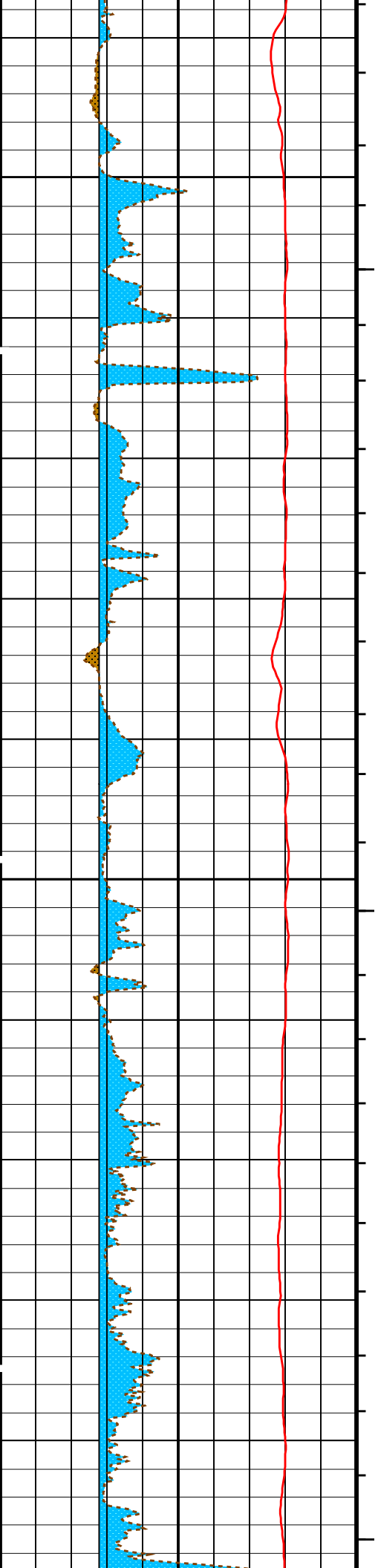
- ┌ Integrated Hole Volume Minor Pip Every 0.1 M3
- ┌ Integrated Hole Volume Major Pip Every 1 M3
 - └ Integrated Cement Volume Minor Pip Every 0.1 M3
 - └ Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S

CAVERNA From BS to HCAL							
REVOQUE From HCAL to BS							
-80	SP (SP) (MV)	20	0	AIT-H 90 Inch Investigation (AHT90) (OHMM)	10	0.4	Env.Corr.Thermal Neutron Porosity (TNPH) (V/V)
0	RWA (RWA) (OHMM)	1	0	AIT-H 60 Inch Investigation (AHT60) (OHMM)	10	Gas From DPHZ to TNPH	
0	Std. Res. Formation Pe (PEFZ) (---	5	0	AIT-H 30 Inch Investigation (AHT30) (OHMM)	10	0.4	Sonic Porosity (SPHI) (V/V)
6	Caliper (HCAL) (IN)	16	0	AIT-H 20 Inch Investigation (AHT20) (OHMM)	10	0.4	MRX Total Porosity (MRP_MRF[1]) (V/V)
6	Bit Size (BS) (IN)	16	0	AIT-H 10 Inch Investigation (AHT10) (OHMM)	10	0.4	Std. Res. Density Porosity (DPHZ) (V/V)
			0		1000		

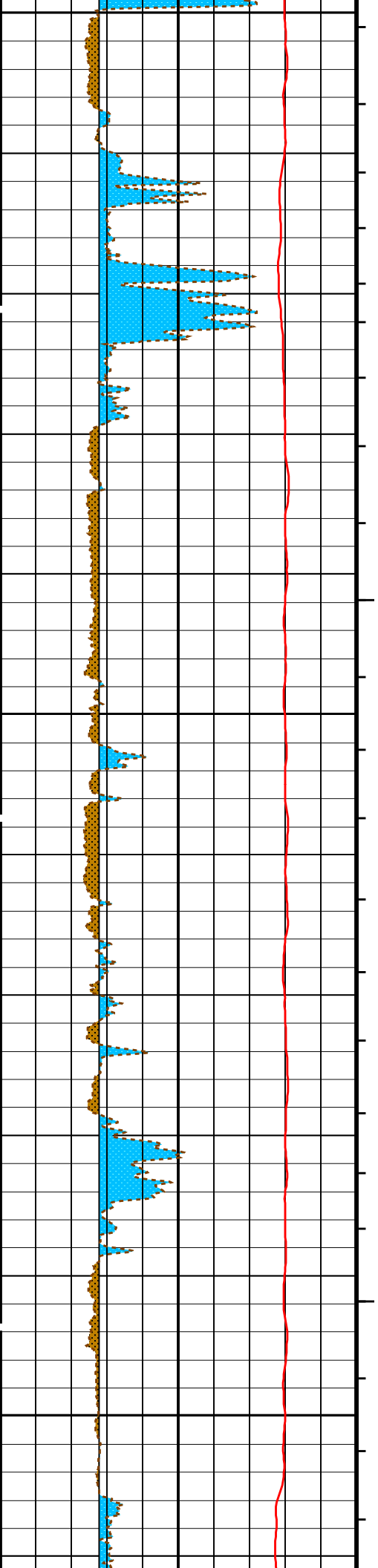






425

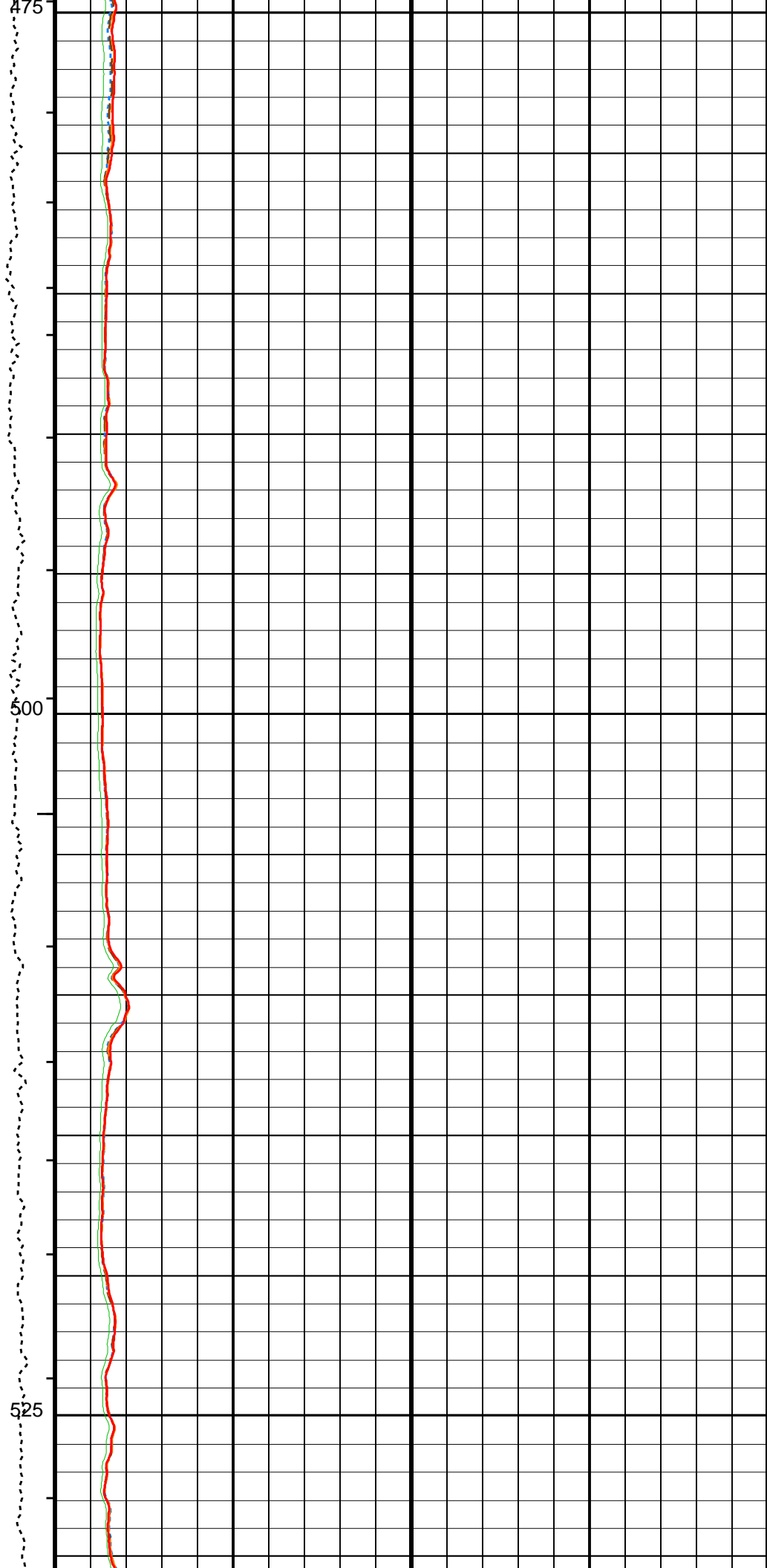
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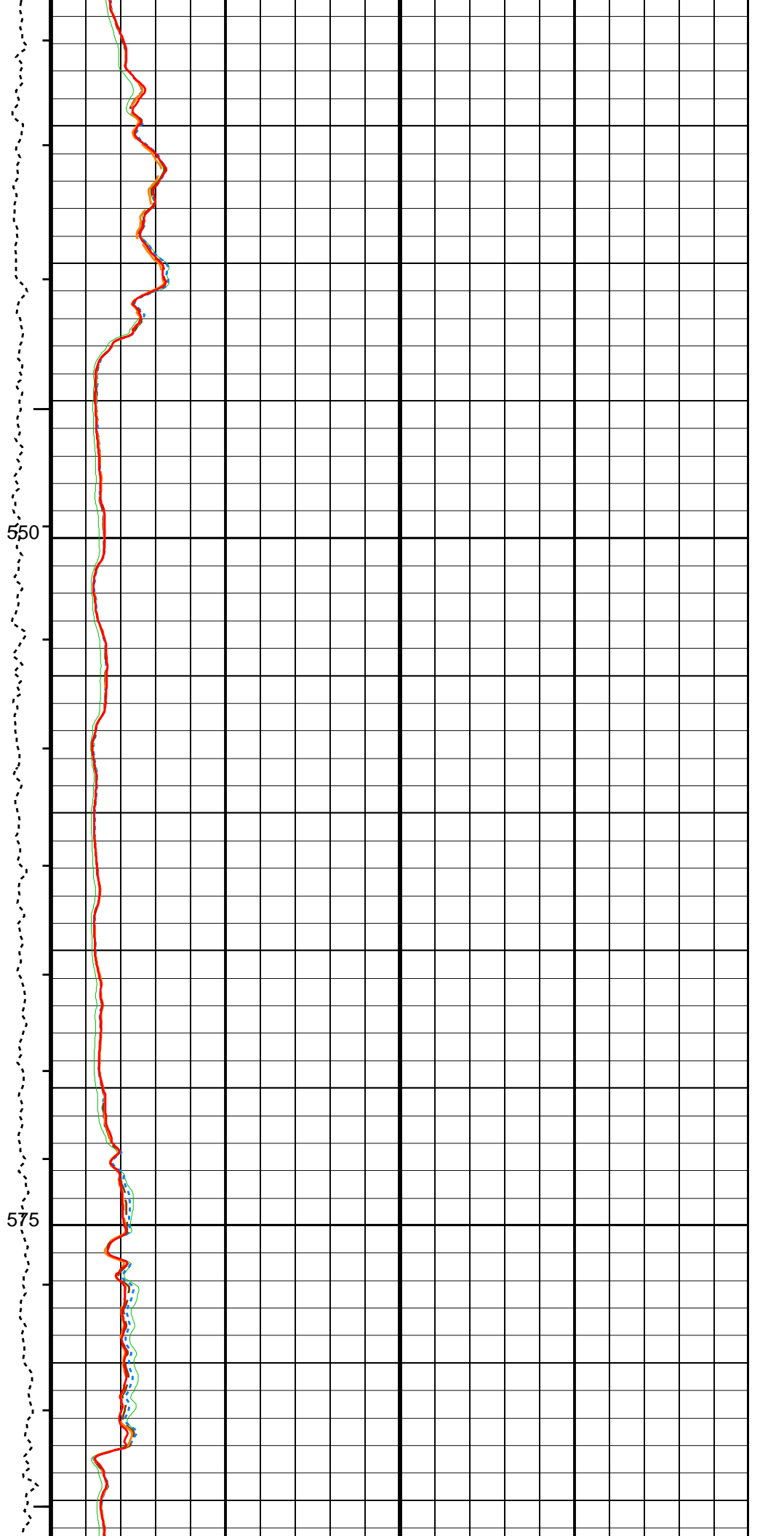
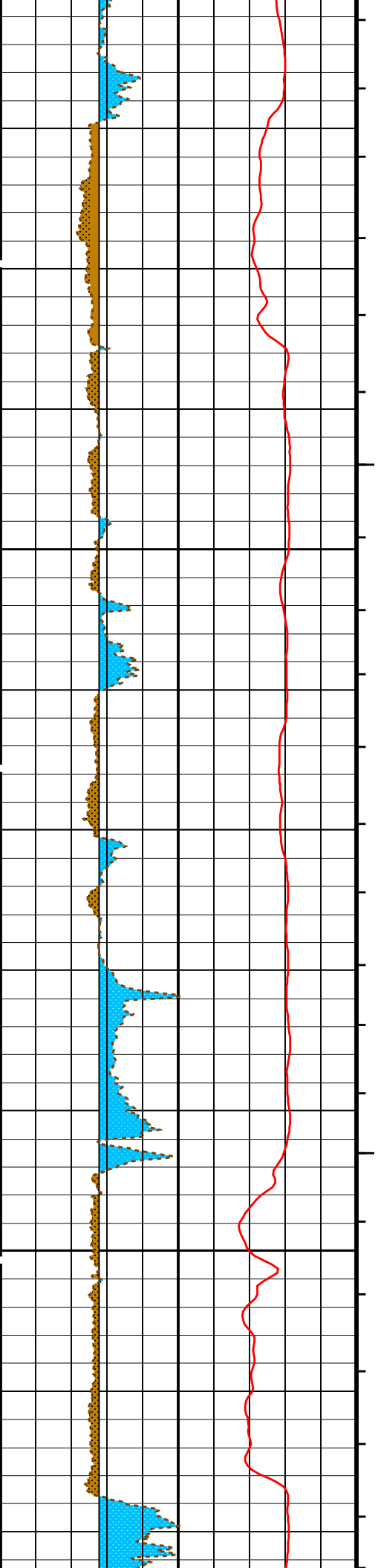


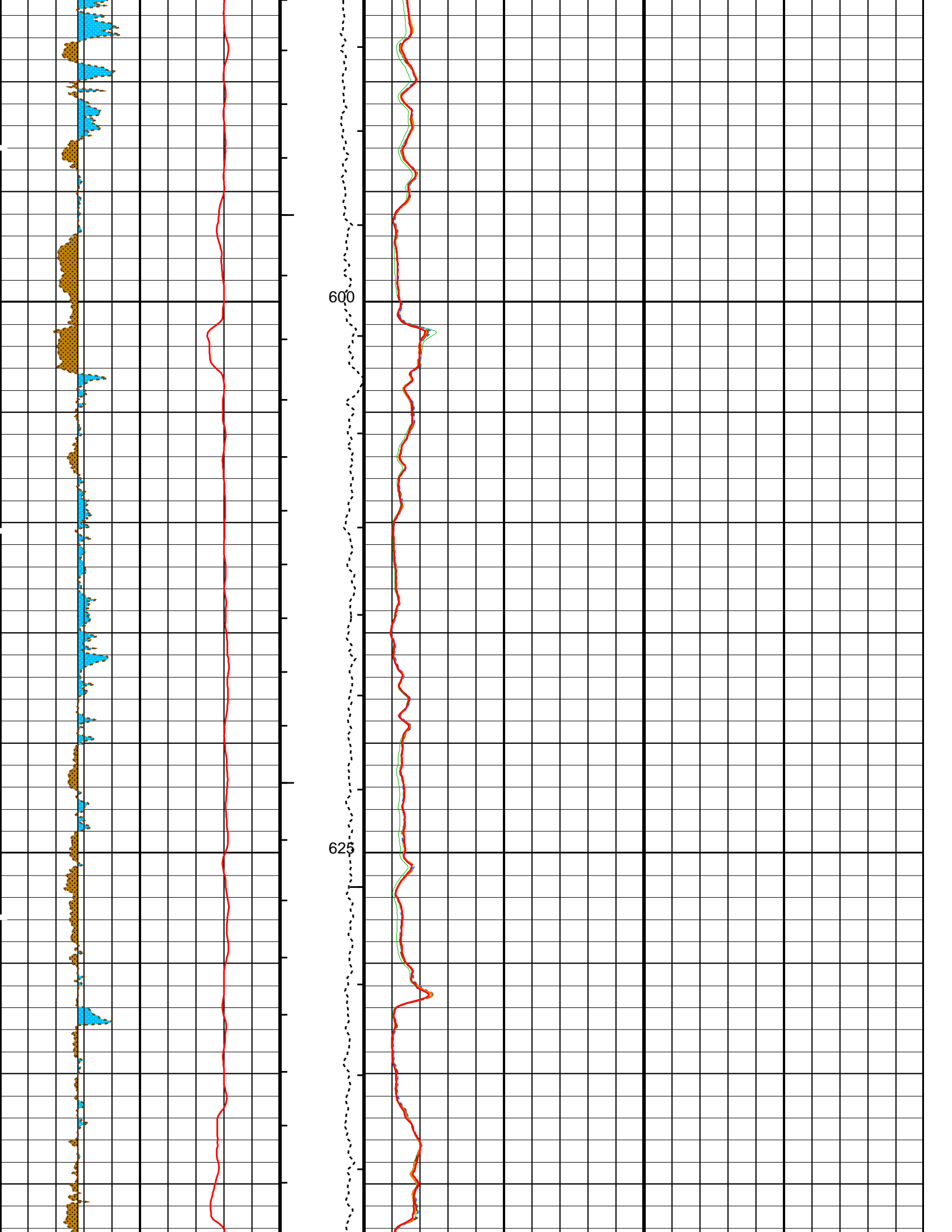
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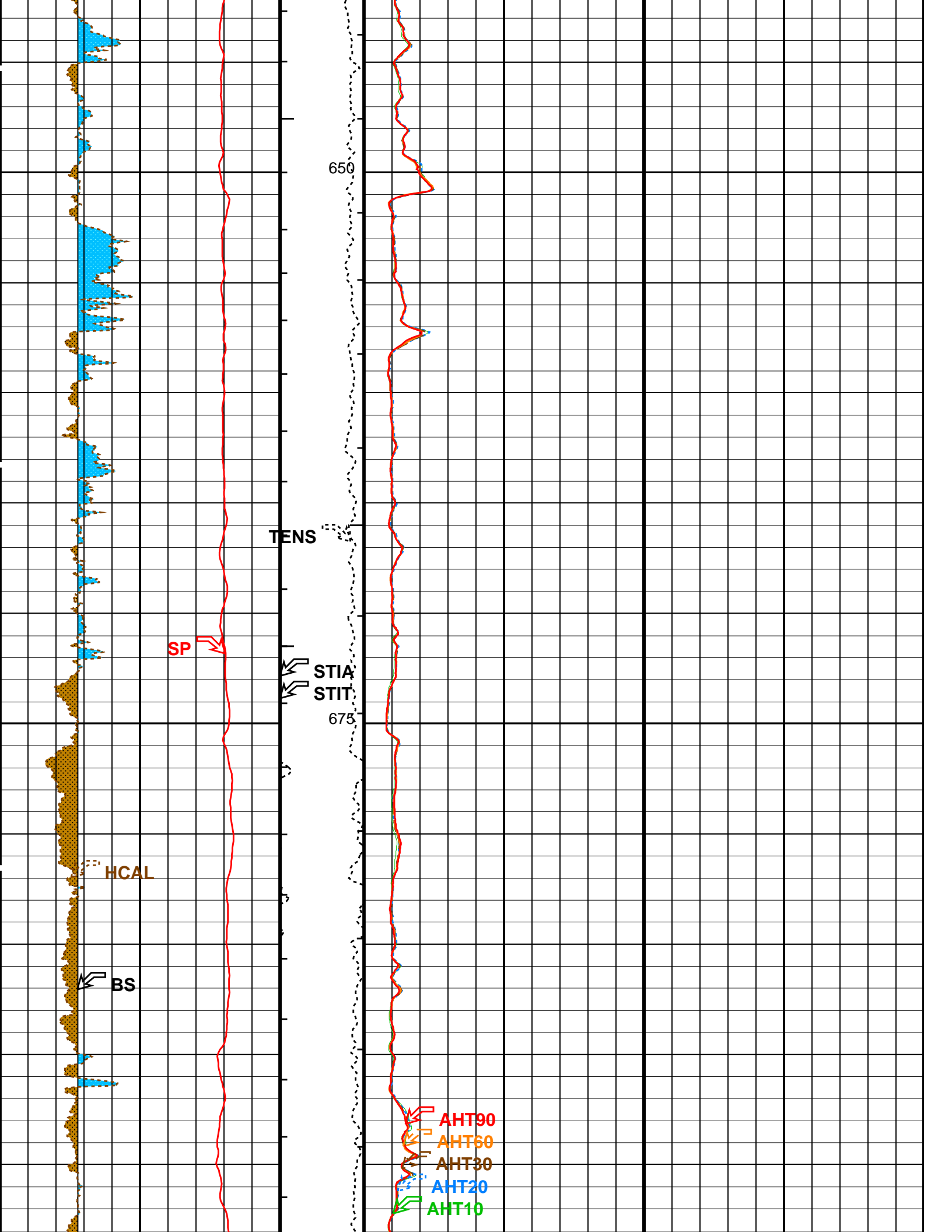
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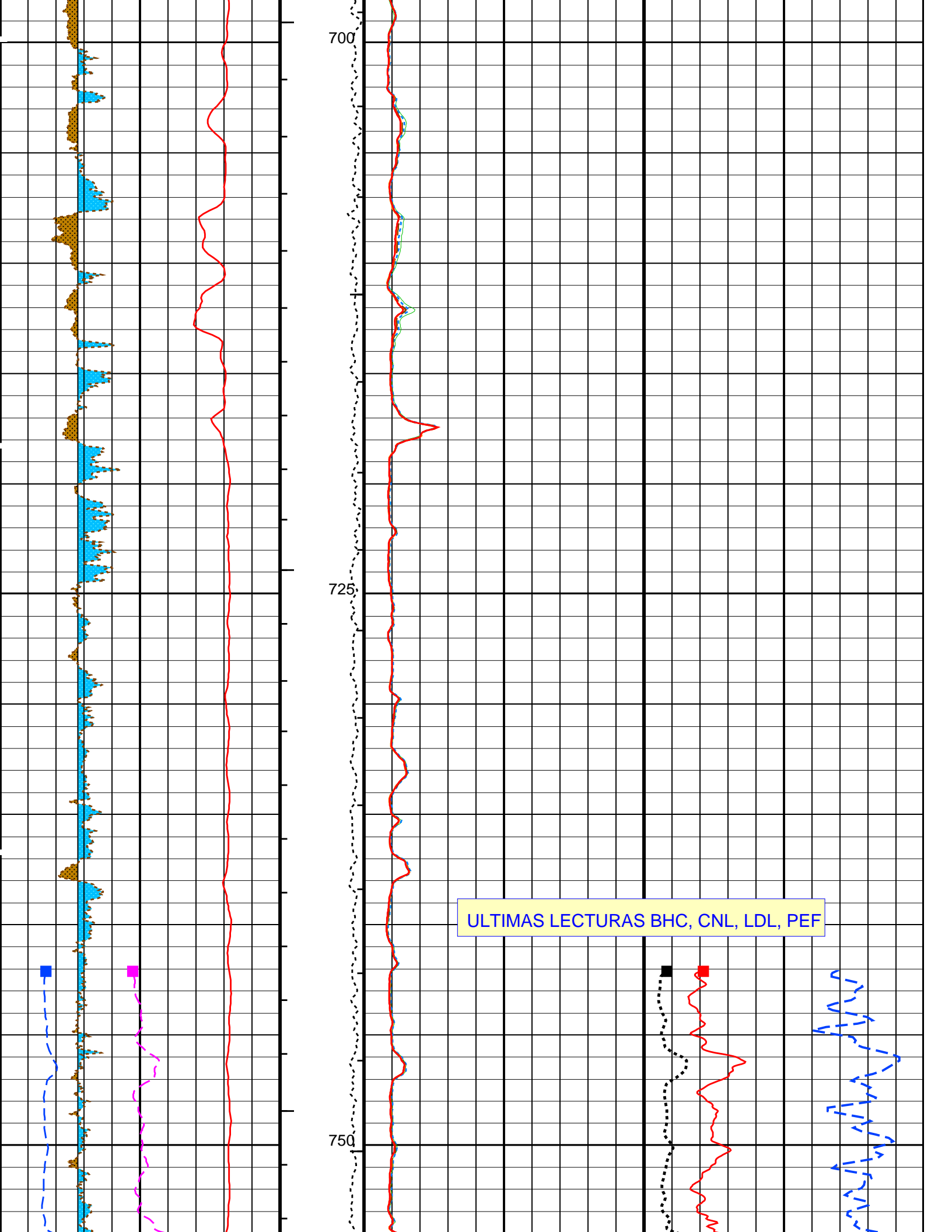
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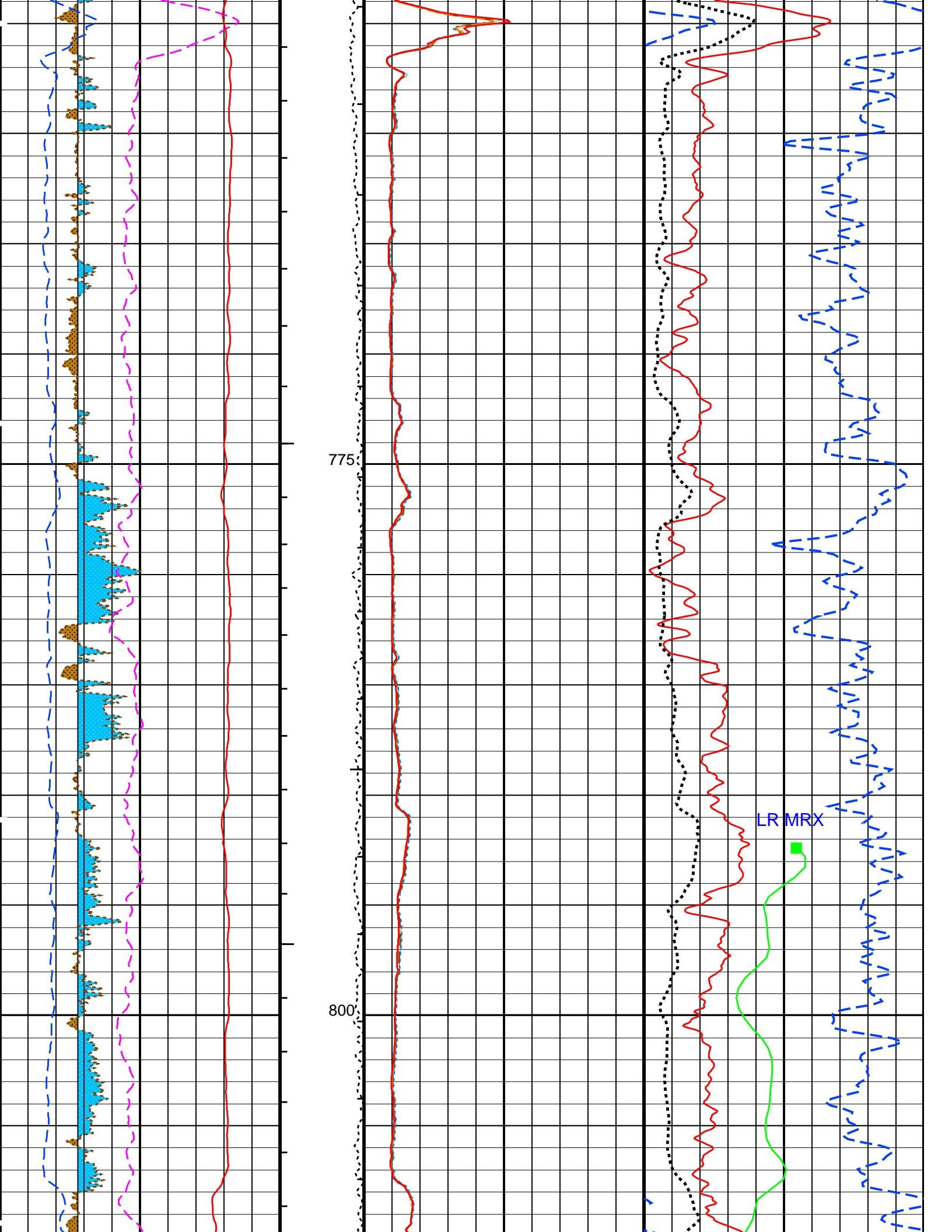


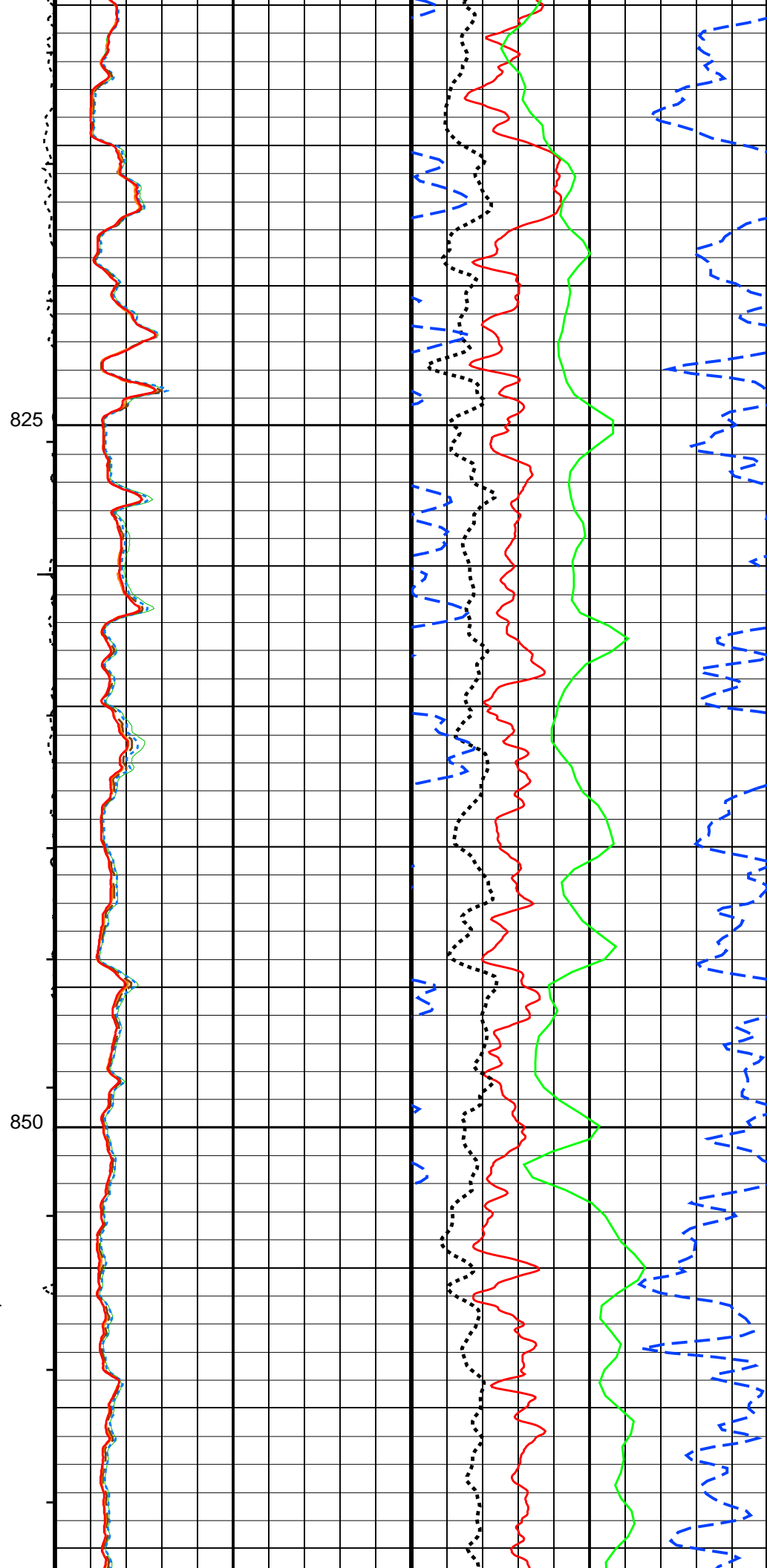
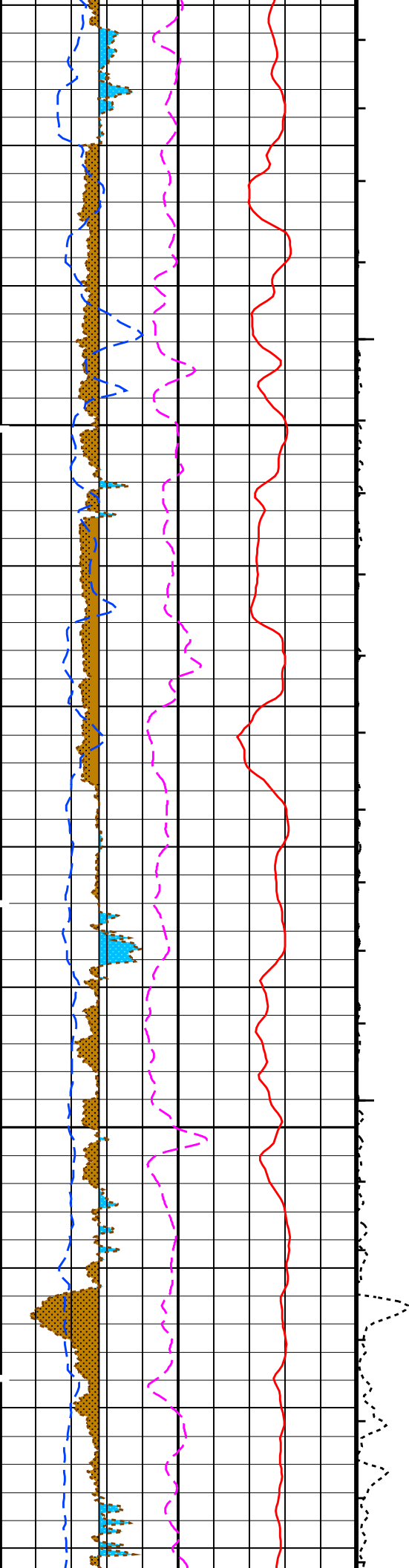


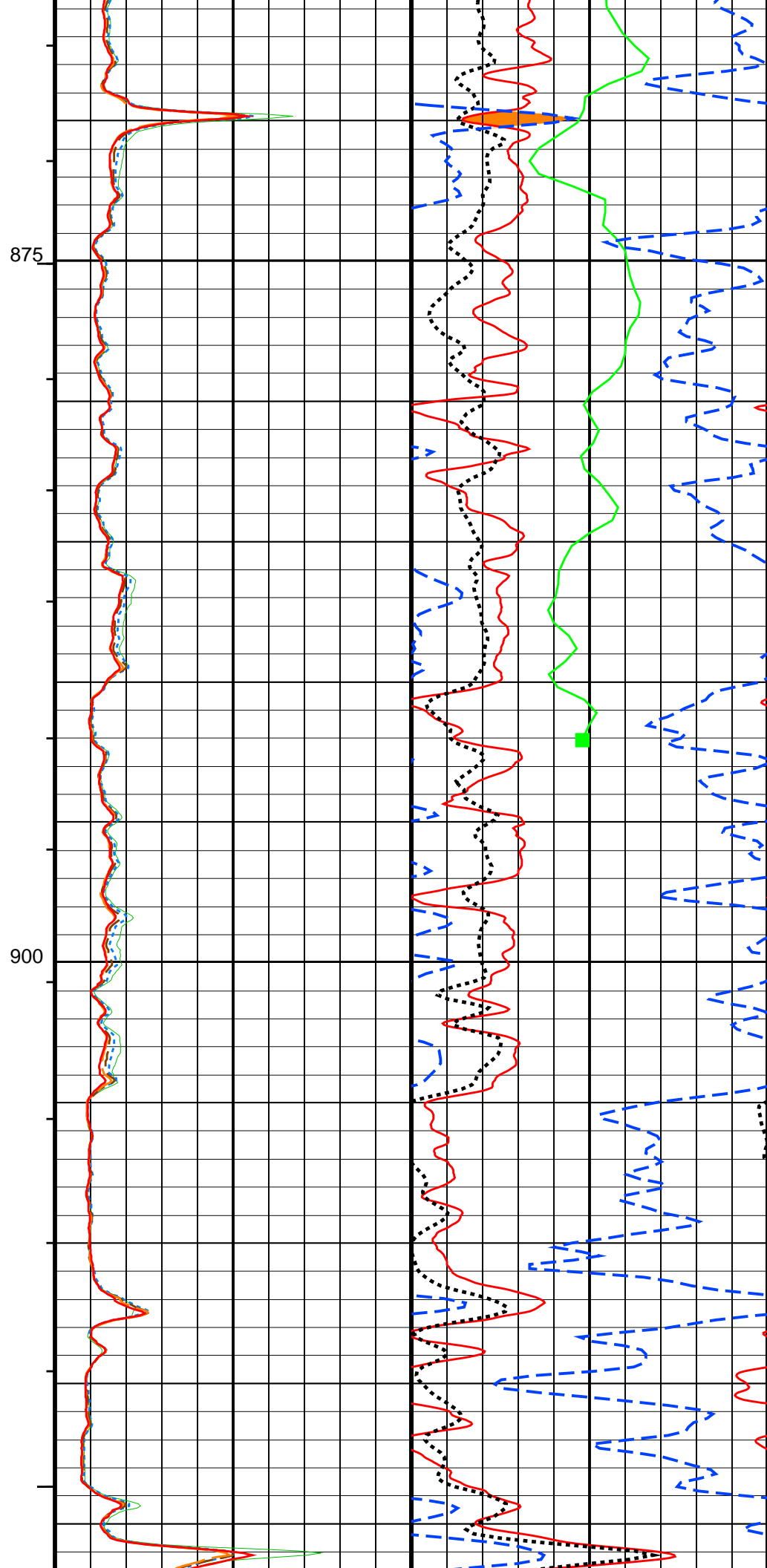
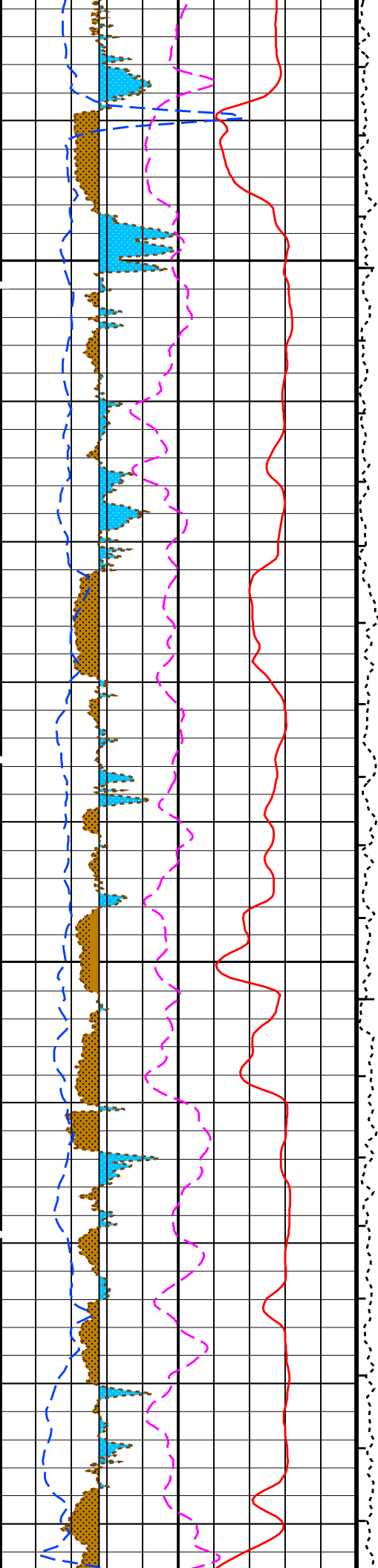


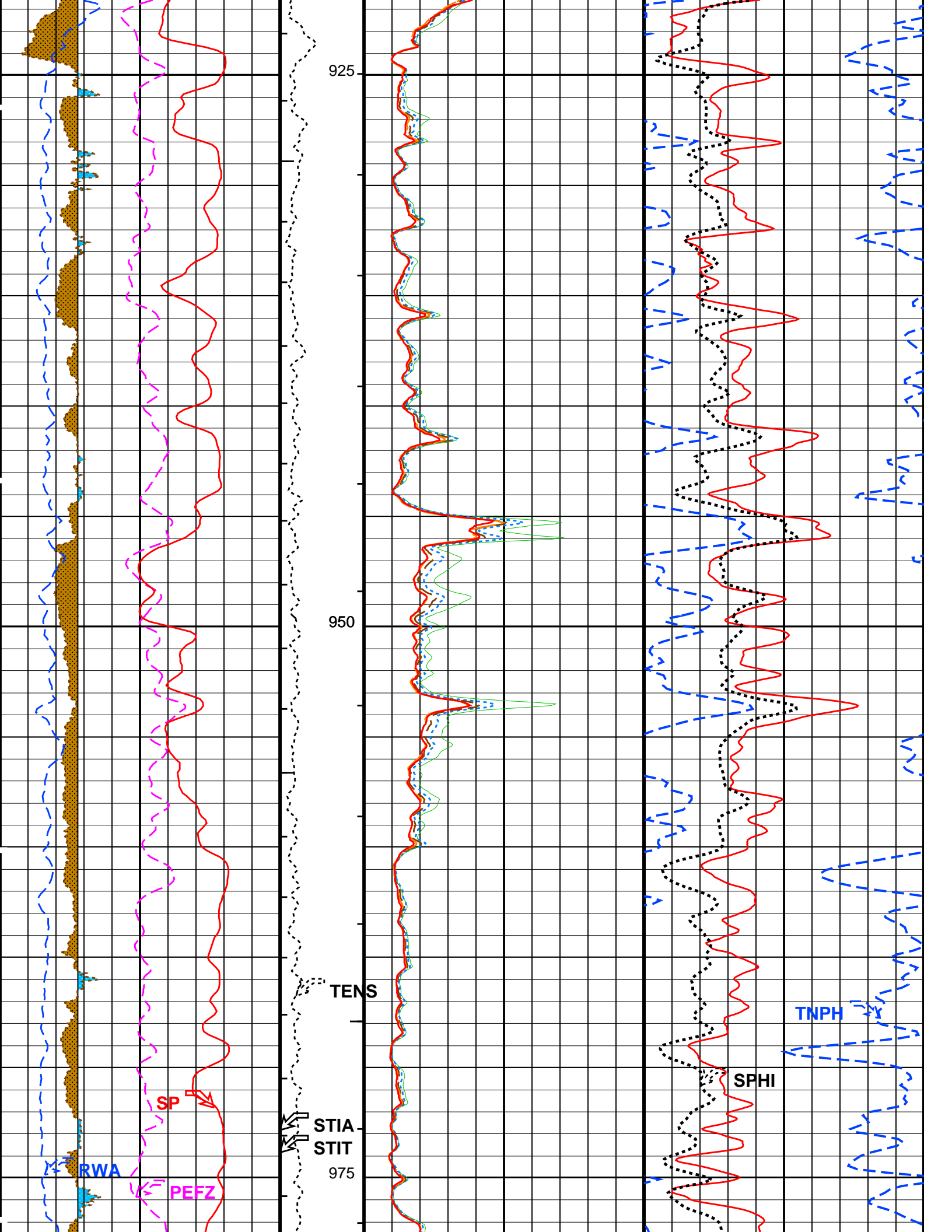


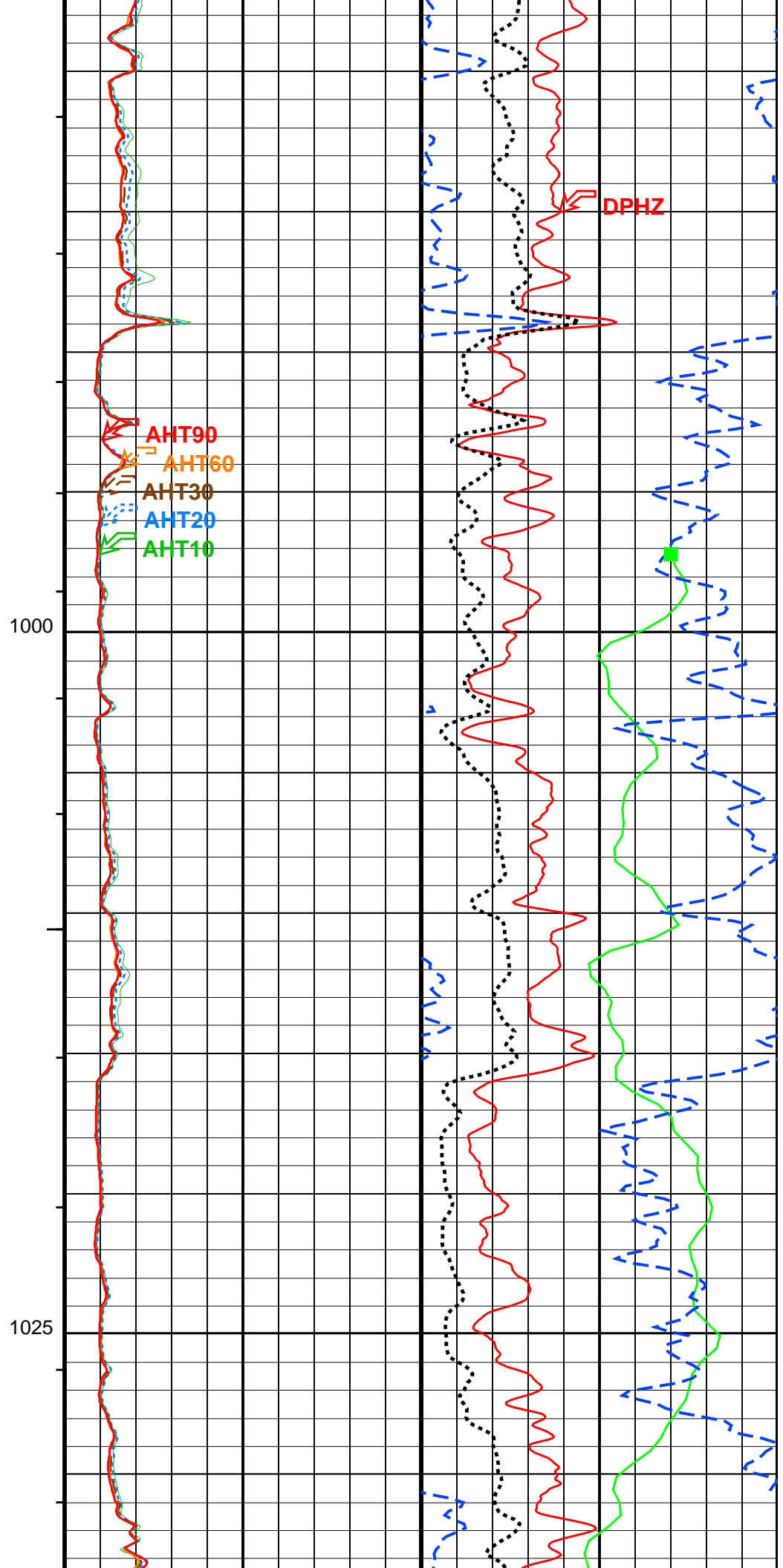
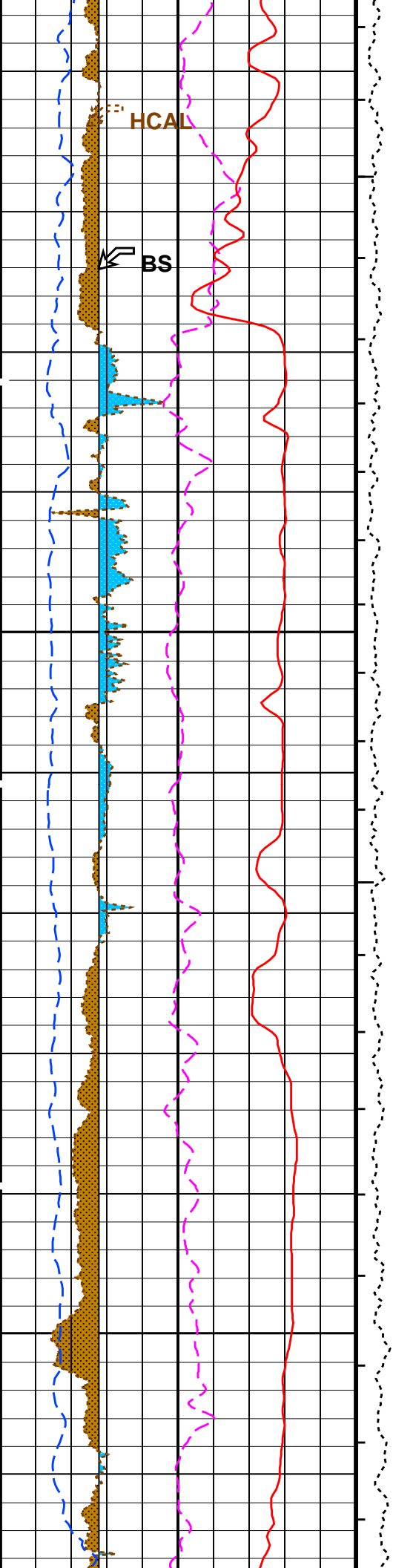
ULTIMAS LECTURAS BHC, CNL, LDL, PEF

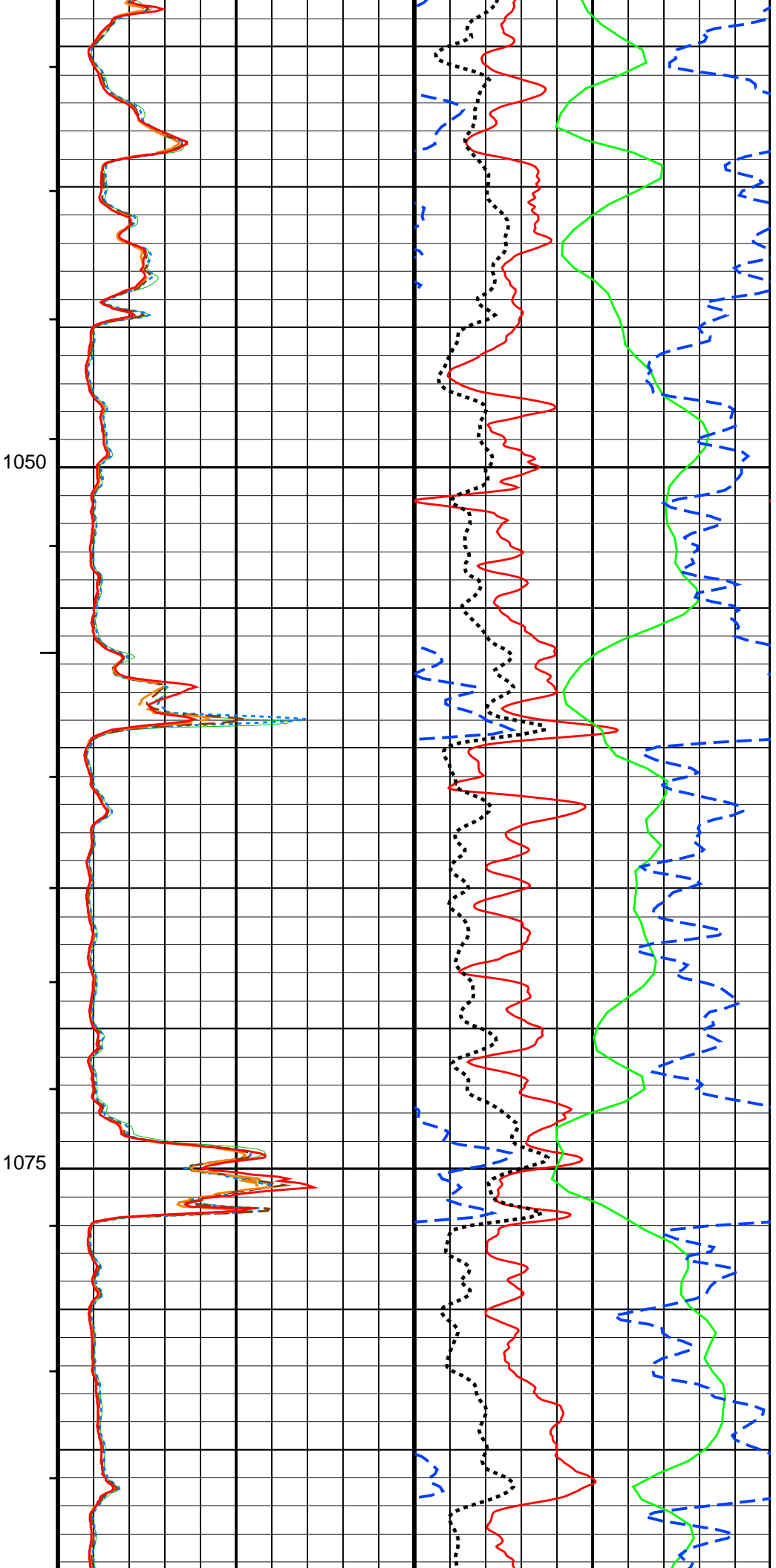
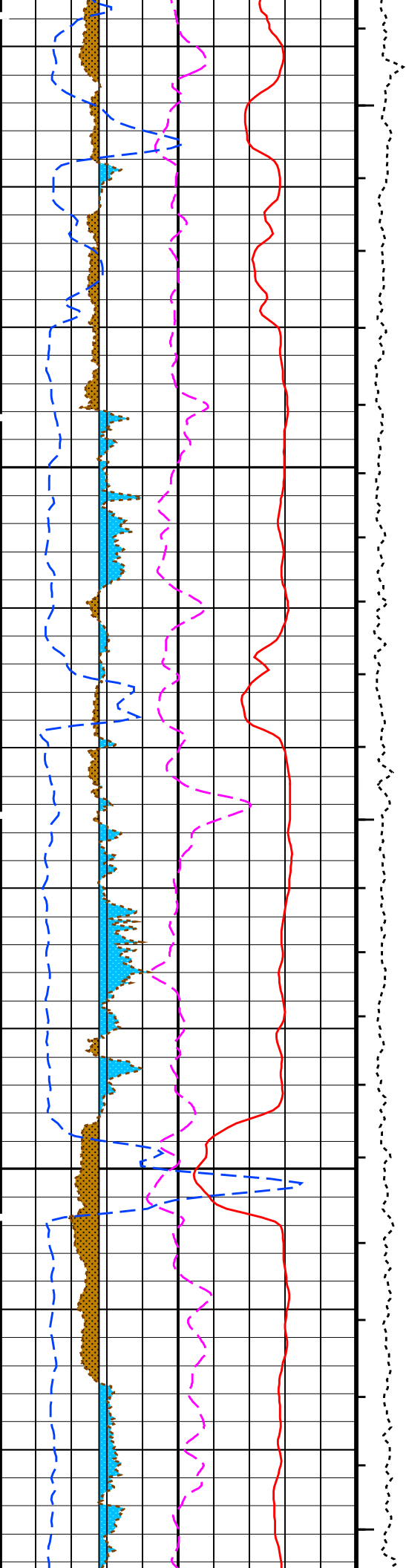


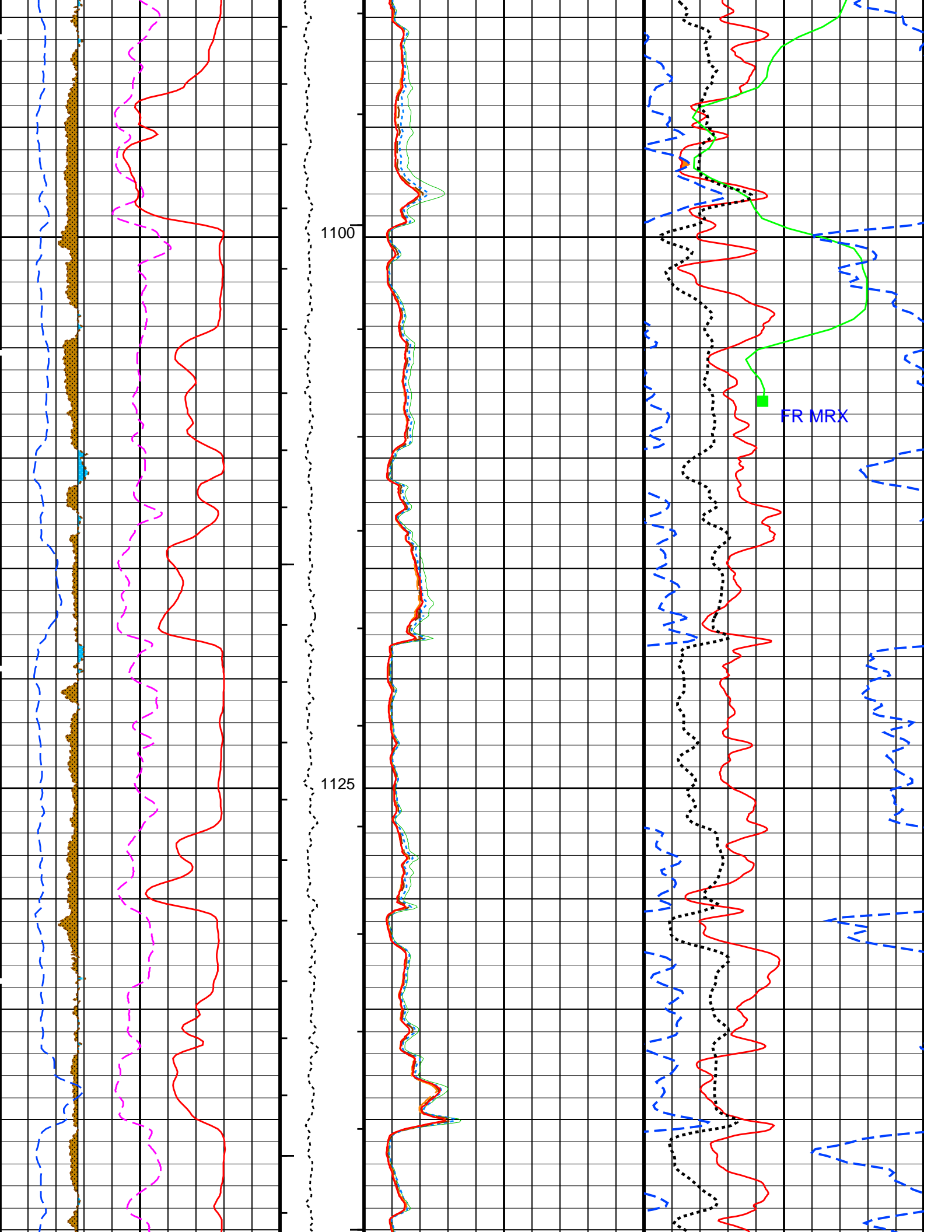


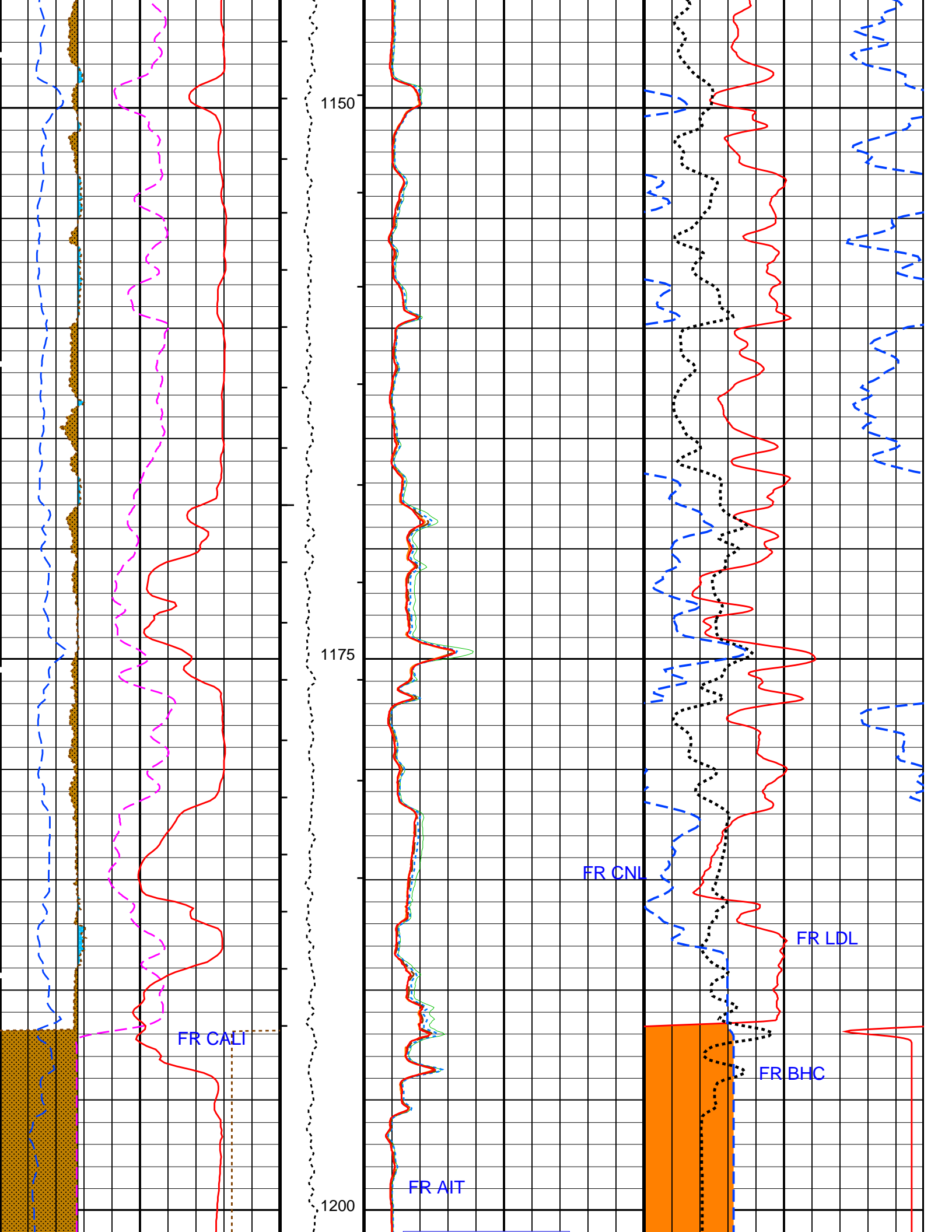












Bit Size (BS) (IN)	16	Tension (TENS) (LBF)	0	1000	AIT-H 10 Inch Investigation (AHT10) (OHMM)	10	0.4	Std. Res. Density Porosity (DPHZ) (V/V)	0
Caliper (HCAL) (IN)	16	Stuck Stretch (STIT) (M)	0	20	AIT-H 20 Inch Investigation (AHT20) (OHMM)	10	0.4	MRX Total Porosity (MRP_MRF[1]) (V/V)	0
Std. Res. Formation Pe (PEFZ) (-----)	5		0		AIT-H 30 Inch Investigation (AHT30) (OHMM)	10	0.4	Sonic Porosity (SPH) (V/V)	0
RWA (RWA) (OHMM)	1		0		AIT-H 60 Inch Investigation (AHT60) (OHMM)	10		Gas From DPHZ to TNPH	
SP (SP) (MV)	20		0		AIT-H 90 Inch Investigation (AHT90) (OHMM)	10	0.4	Env.Corr.Thermal Neutron Porosity (TNPH) (V/V)	0
REVOQUE From HCAL to BS									
CAVERNA From BS to HCAL									

PIP SUMMARY

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

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
MRX-C: Magnetic Resonance eXpert Tool			
DESPIKE_OPT	Despiking Option	ON	
DLSR	Depth Log Sample Rate	18	IN
GAMMA_OPT	GAMMA Parameter Option	MANUAL	
GAMMA_REG	Gamma Regularization Parameter	** V **	
HI_H2O	Hydrogen Index of Water	1	
NCOMP	Number of Components (depth logging)	30	
NECH_SPHASE	Number of Echos to use in Signal Phase Computation	20	
NMR_FLUID_MODEL	Fluid Model for Magnetic Resonance Fluid Typing	WATER	
NSTACK	Number of Stacks down-hole	1	
SEQUENCE_FILE	Sequence File	BMR_S1S4_UP1800_V23_HIGH_AQF	
SPEED_CORR_OPT	Speed Correction Option	OFF	
START_ECHO_OPT	Starting Echo Option	SECOND	
T2CUT	T2 Cutoff between BFV and FFV	33	MS
T2_MAX	T2 Maximum	3000	MS
T2_MIN	T2 Minimum	0.5	MS
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	54	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	YES	
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		YES	
HAIT-H: Array Induction Tool - H				
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff		
AHBHV	Array Induction Borehole Correction Code Version Number		0	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four		
AHBLV	Array Induction Basic Logs Code Version Number		0	
AHCDE	Array Induction Casing Detection Enable		Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)		Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution		No version available	
AHMRF	Array Induction Mud Resistivity Factor		1	
AHORSV	Array Induction Response Set Version for One ft Resolution		No version available	
AHRFV	Array Induction Radial Profiling Code Version Number		0	
AHRPV	Array Induction Radial Parametrization Code Version Number		0	
AHSTA	Array Induction Tool Standoff		1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution		No version available	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90		
BHS	Borehole Status		OPEN	
BHT	Bottom Hole Temperature (used in calculations)		54	DEGC
FEXP	Form Factor Exponent		2	
FNUM	Form Factor Numerator		0.81	
FPHI	Form Factor Porosity Source		SPHI	
GCSE	Generalized Caliper Selection		HCAL	
GDEV	Average Angular Deviation of Borehole from Normal		1	DEG
GGRD	Geothermal Gradient		0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST		
GTSE	Generalized Temperature Selection	HSTS_HTEM		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
RTCO	RTCO - Rt Invasion Correction		YES	
SHT	Surface Hole Temperature		20	DEGC
SPNV	SP Next Value		0	MV
DSL-T-H: Digitizing Sonic Logging Tool				
CDTS	C-Delta-T Shale		100	US/F
DTF	Delta-T Fluid		204.5	US/F
DTM	Delta-T Matrix		56	US/F
SPFS	Sonic Porosity Formula	RAYMER_HUNT		
SPSO	Sonic Porosity Source	DT		
HILTB-FTB: High resolution Integrated Logging Tool-DTS				
BHFL	Borehole Fluid Type		WATER	
BHFL_TLD	HILT Nuclear Mud Base		WATER	
BHS	Borehole Status		OPEN	
BHT	Bottom Hole Temperature (used in calculations)		54	DEGC
BSCO	Borehole Salinity Correction Option		YES	
CCCO	Casing & Cement Thickness Correction Option		NO	
DHC	Density Hole Correction		BS	
FD	Fluid Density		1	G/C3
FEXP	Form Factor Exponent		2	
FNUM	Form Factor Numerator		0.81	
FPHI	Form Factor Porosity Source		SPHI	
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		1	DEG
GGRD	Geothermal Gradient		0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST		
GTSE	Generalized Temperature Selection	HSTS_HTEM		
HSCO	Hole Size Correction Option		YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
MCCO	Mud Cake Correction Option		YES	
MCOR	Mud Correction		NATU	
MDEN	Matrix Density		2.65	G/C3
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		20	DEGC
SOCN	Standoff Distance		0.125	IN
SOCO	Standoff Correction Option		YES	
RWA: Apparent Water Resistivity				
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90		
BHS	Borehole Status		OPEN	
BHT	Bottom Hole Temperature (used in calculations)		54	DEGC
FEXP	Form Factor Exponent		2	
FNUM	Form Factor Numerator		0.81	
FPHI	Form Factor Porosity Source		SPHI	
GCSE	Generalized Caliper Selection		HCAL	
GDEV	Average Angular Deviation of Borehole from Normal		1	DEG
GGRD	Geothermal Gradient		0.018227	DC/M

GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
RTCO	RTCO – Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	20	DEGC
ALLRES: Basic Resistivity Transforms			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
RTCO	RTCO – Rt Invasion Correction	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	54	DEGC
FCD	Future Casing (Outer) Diameter	5.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth – Driller	1201.00	M
TDL	Total Depth – Logger	1202.00	M
System and Miscellaneous			
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	1000.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	32.30	LB/F
DFD	Drilling Fluid Density	1.15	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	0.00	M
PP	Playback Processing	OFF	
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1202	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA Vertical Scale: 1:200 Graphics File Created: 30-Sep-2008 23:53

OP System Version: 16C0-147

MCM

MRX-C	SPC-3649-MRXKit17	EDTC-B	SKK-3494-EDTCB
HAIT-H	SRPC-3624-Q2_2008_OP16	DSL-T-H	16C0-147
HILTB-FTB	SRPC-3624-Q2_2008_OP16	DTC-H	16C0-147

Input DLIS Files

DEFAULT	MRX_AIT_SONIC_TLD_061PUP	FN:108	PRODUCER	30-Sep-2008 23:49	1203.4 M	337.1 M
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Output DLIS Files

DEFAULT	MRX_AIT_SONIC_TLD_063PUP	FN:110	PRODUCER	30-Sep-2008 23:53		
CLIENTE_MRX	MRX_AIT_SONIC_TLD_063PUC	FN:111	CUSTOMER	30-Sep-2008 23:53		



TRAMO REPETIDO

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_013LUP	FN:20	PRODUCER	30-Sep-2008 14:11	1205.2 M	1007.5 M
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Output DLIS Files

DEFAULT	AIT SONIC TLD MCFL 026PUP	FN:48	PRODUCER	30-Sep-2008 16:44	1206.1 M	1109.9 M
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Integrated Hole/Cement Volume Summary

Hole Volume = 3.40 M3
 Cement Volume = 1.99 M3 (assuming 5.50 IN casing O.D.)
 Computed from 1202.0 M to 1110.1 M using data channel(s) HCAL

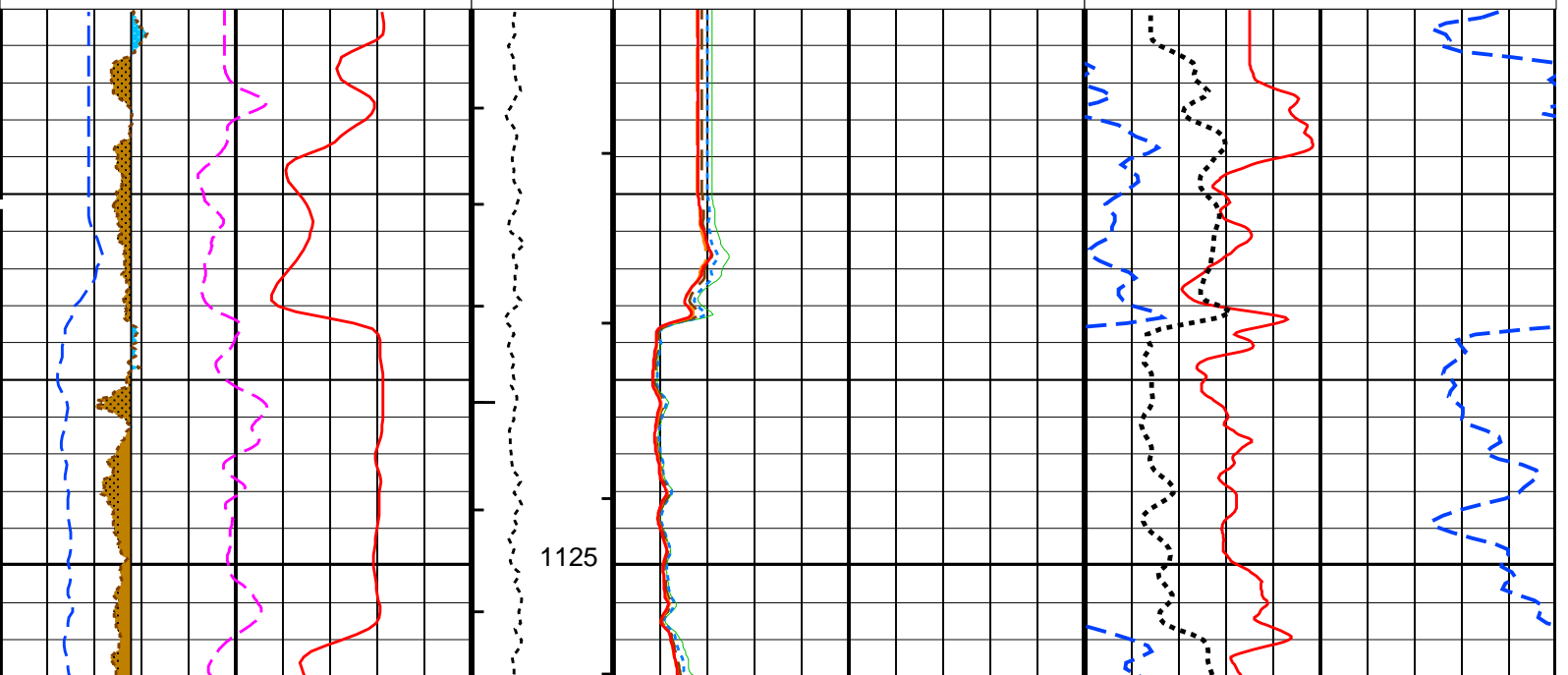
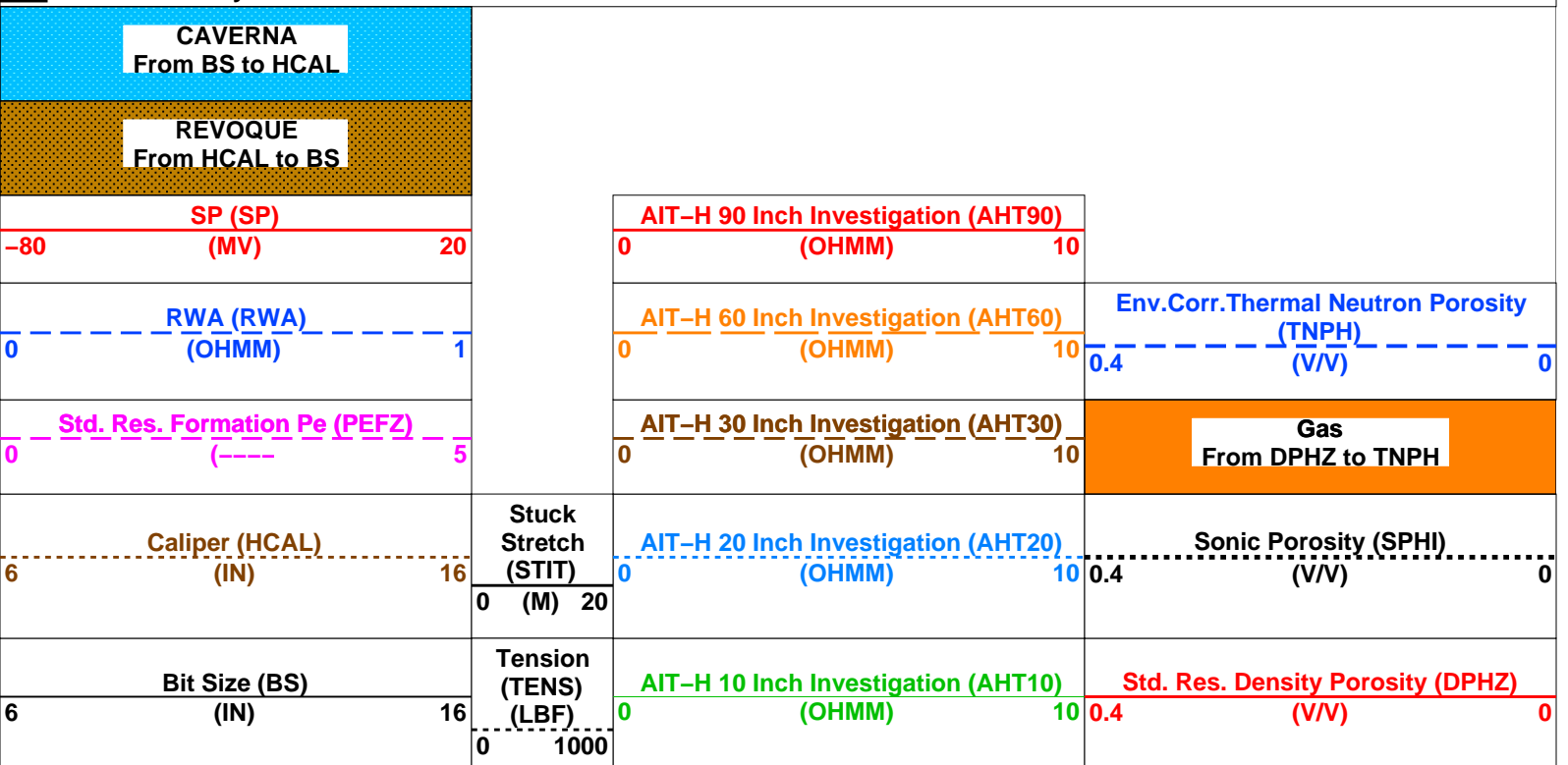
OP System Version: 16C0-147 MCM

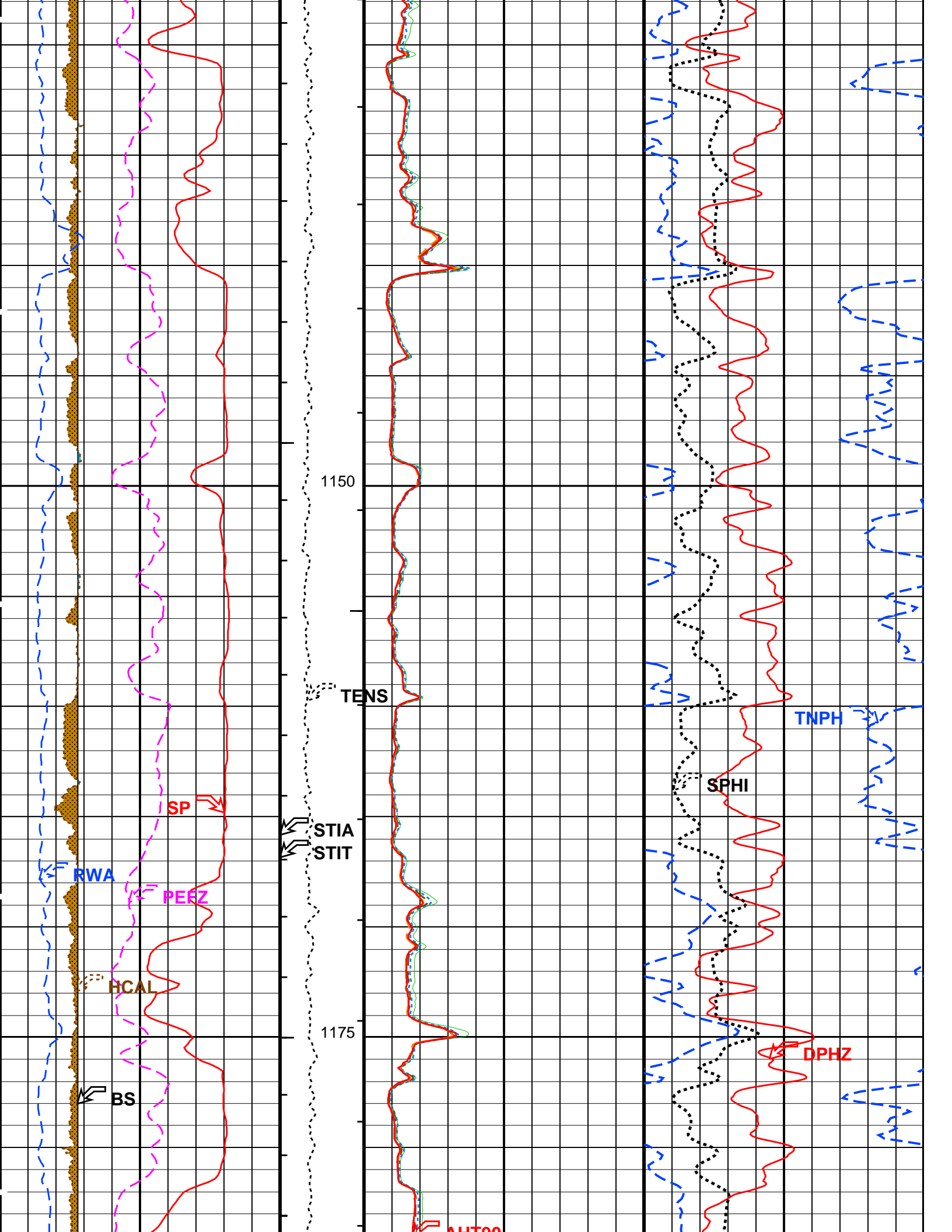
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HILTB-FTB	SRPC-3624-Q2_2008_OP16	DTC-H	16C0-147

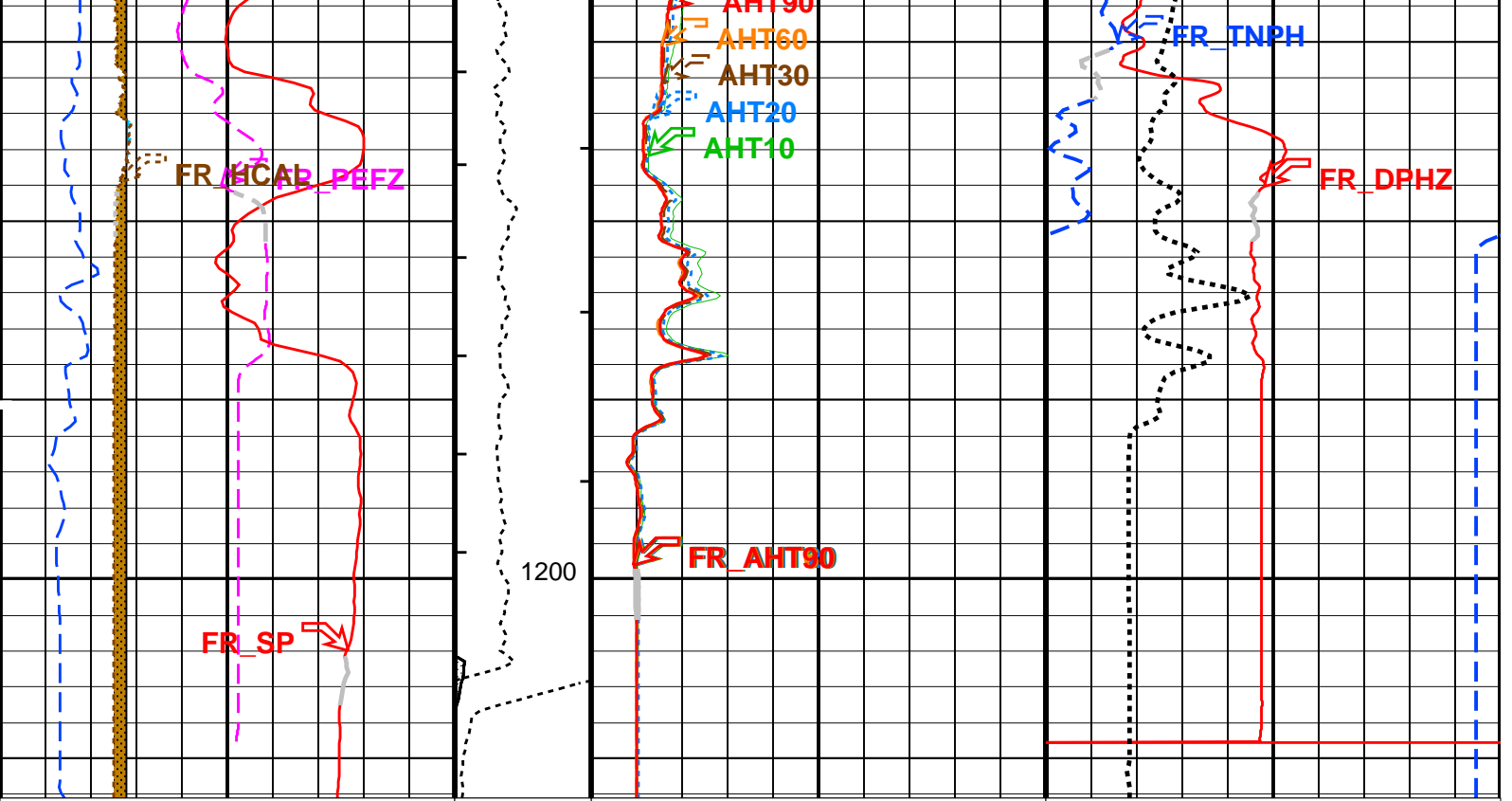
PIP SUMMARY

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

Time Mark Every 60 S







Bit Size (BS) (IN)	Tension (TENS) (LBF)	AIT-H 10 Inch Investigation (AHT10) (OHMM)	Std. Res. Density Porosity (DPHZ) (V/V)
6 16	0 1000	0 10	0.4 0
Caliper (HCAL) (IN)	Stuck Stretch (STIT) (M)	AIT-H 20 Inch Investigation (AHT20) (OHMM)	Sonic Porosity (SPHI) (V/V)
6 16	0 20	0 10	0.4 0
Std. Res. Formation Pe (PEFZ) (---)	AIT-H 30 Inch Investigation (AHT30) (OHMM)	Gas From DPHZ to TNPH	
0 5	0 10	AIT-H 60 Inch Investigation (AHT60) (OHMM)	Env.Corr.Thermal Neutron Porosity (TNPH) (V/V)
RWA (RWA) (OHMM)	AIT-H 90 Inch Investigation (AHT90) (OHMM)	0 10	0.4 0
0 1	0 10		
SP (SP) (MV)			
-80 20			
REVOQUE From HCAL to BS			
CAVERNA From BS to HCAL			

PIP SUMMARY

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

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HAIT-H: Array Induction Tool - H		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
AHBHV	Array Induction Borehole Correction Code Version Number	900
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHBLV	Array Induction Basic Logs Code Version Number	223
AHCDE	Array Induction Casing Detection Enable	Yes

AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
AHRFV	Array Induction Radial Profiling Code Version Number	701	
AHRPV	Array Induction Radial Parametrization Code Version Number	232	
AHSTA	Array Induction Tool Standoff	1.5	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	54	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
RTCO	RTCO - Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	20	DEGC
SPNV	SP Next Value	-6	MV
DSLTL-H: Digitizing Sonic Logging Tool			
CDTS	C-Delta-T Shale	100	US/F
DTF	Delta-T Fluid	204.5	US/F
DTM	Delta-T Matrix	56	US/F
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DT	
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	54	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
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	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
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	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
RWA: Apparent Water Resistivity			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
RTCO	RTCO - Rt Invasion Correction	YES	
ALLRES: Basic Resistivity Transforms			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
RTCO	RTCO - Rt Invasion Correction	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	54	DEGC
FCD	Future Casing (Outer) Diameter	5.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC

STI: Stuck Tool Indicator	Trigger for MAXIS First Reading Label	TDL	
LBFR	STI Stuck Threshold	0.762	M
STKT	Total Depth - Driller	1201.00	M
TDD	Total Depth - Logger	1202.00	M
TDL			
System and Miscellaneous			
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	1000.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	32.30	LB/F
DFD	Drilling Fluid Density	1.15	G/C3
DO	Depth Offset for Playback	0.9	M
DORL	Depth Offset for Repeat Analysis	0.0	M
FLEV	Fluid Level	0.00	M
MST	Mud Sample Temperature	23.00	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.1400	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1202	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: COMBINADA Vertical Scale: 1:200 Graphics File Created: 30-Sep-2008 16:44

OP System Version: 16C0-147

MCM

HAIT-H	SRPC-3624-Q2_2008_OP16	DSLT-H	16C0-147
HILTB-FTB	SRPC-3624-Q2_2008_OP16	DTC-H	16C0-147

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_013LUP	FN:20	PRODUCER	30-Sep-2008 14:11	1205.2 M	1007.5 M
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Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_026PUP	FN:48	PRODUCER	30-Sep-2008 16:44		
CLIENTE_RUN_1	AIT_SONIC_TLD_MCFL_026PUC	FN:49	CUSTOMER	30-Sep-2008 16:44		

ANALISIS DE REPETIBILIDAD

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_024PUP	FN:44	PRODUCER	30-Sep-2008 16:34	1203.4 M	349.0 M
DEFAULT	AIT_SONIC_TLD_MCFL_013LUP	FN:20	PRODUCER	30-Sep-2008 14:11	1205.2 M	1007.5 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_026PUP	FN:48	PRODUCER	30-Sep-2008 16:44	1206.1 M	1109.9 M
CLIENTE_RUN_1	AIT_SONIC_TLD_MCFL_026PUC	FN:49	CUSTOMER	30-Sep-2008 16:44	1206.1 M	1109.9 M

Integrated Hole/Cement Volume Summary

Hole Volume = 3.40 M3
 Cement Volume = 1.99 M3 (assuming 5.50 IN casing O.D.)
 Computed from 1202.0 M to 1110.1 M using data channel(s) HCAL

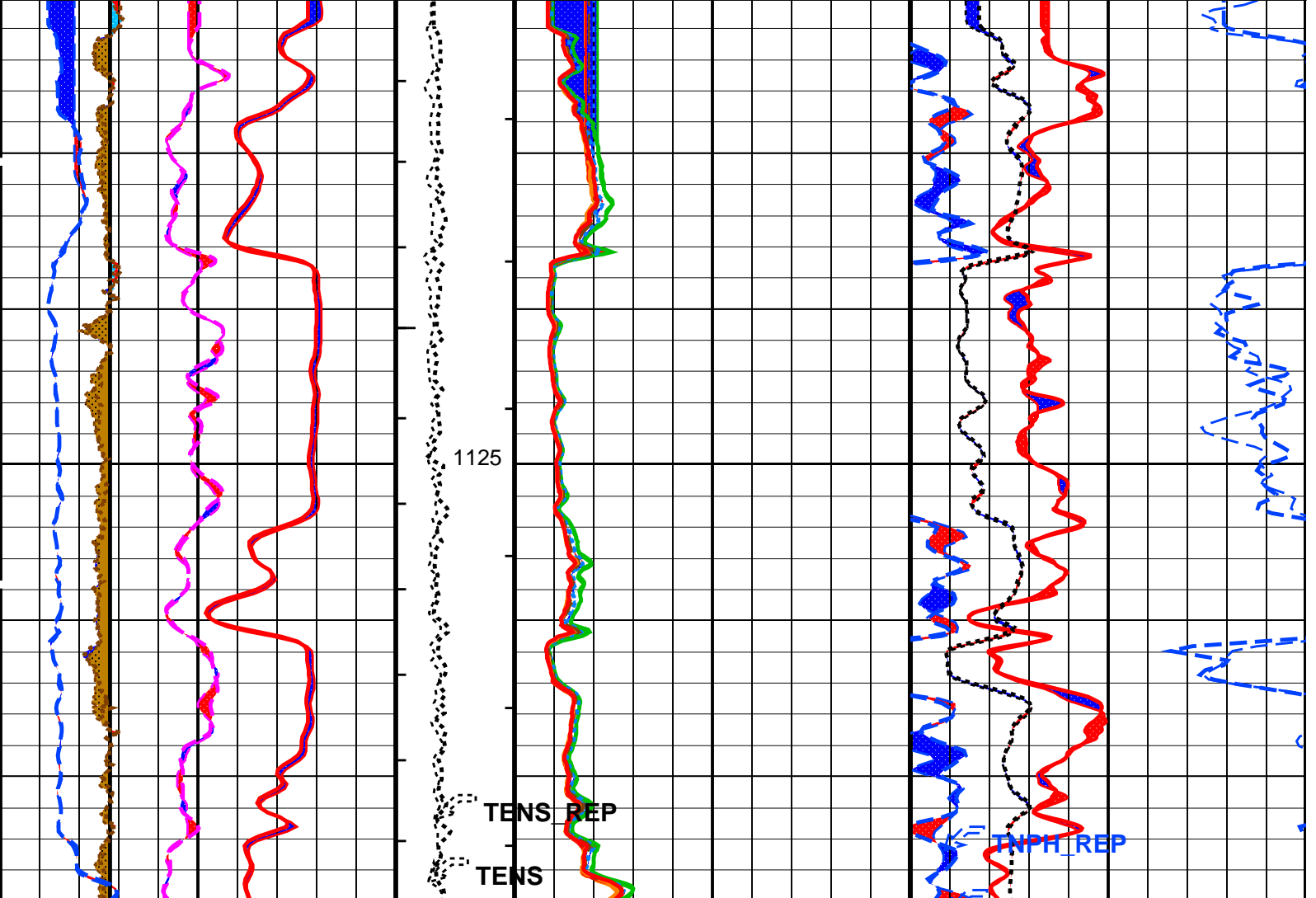
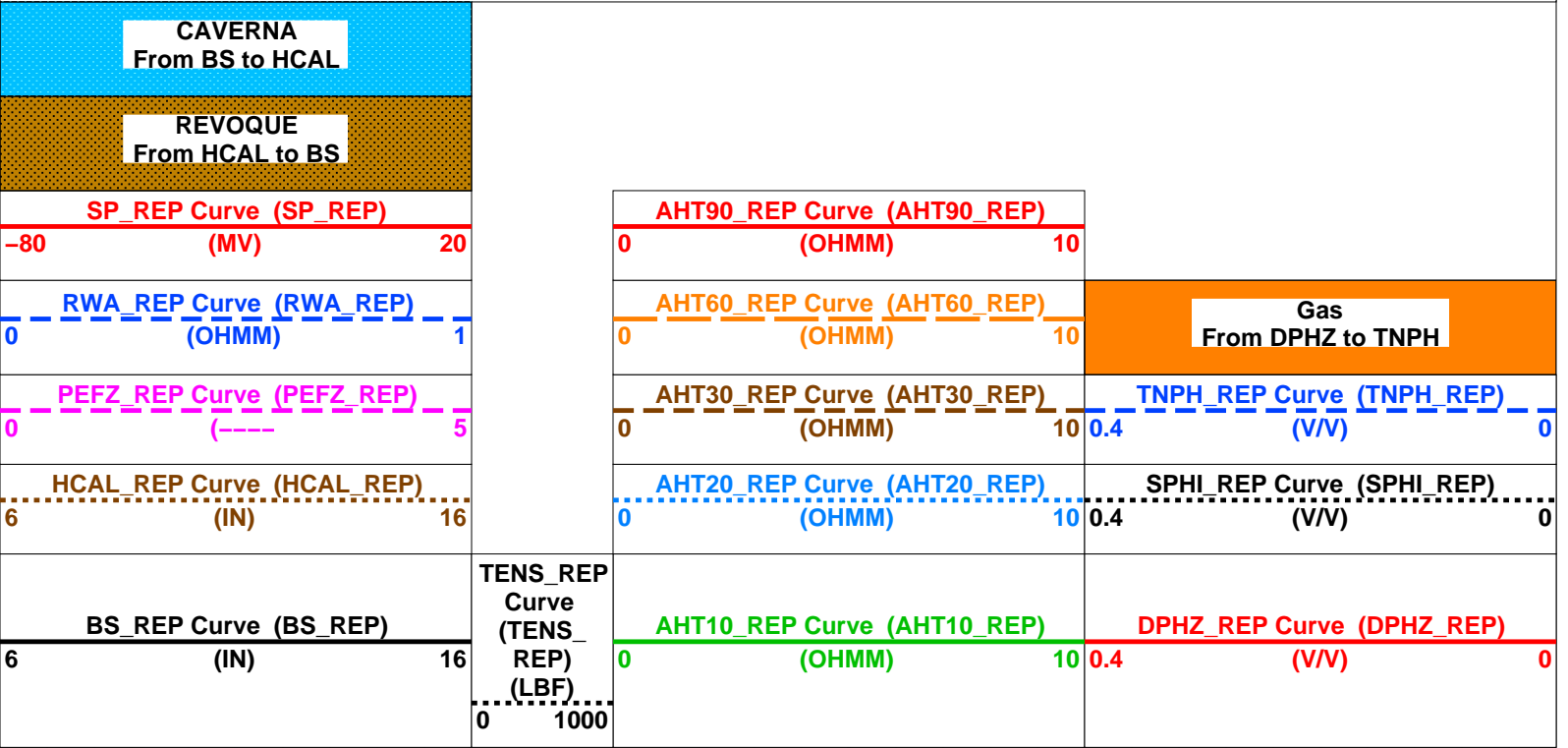
OP System Version: 16C0-147

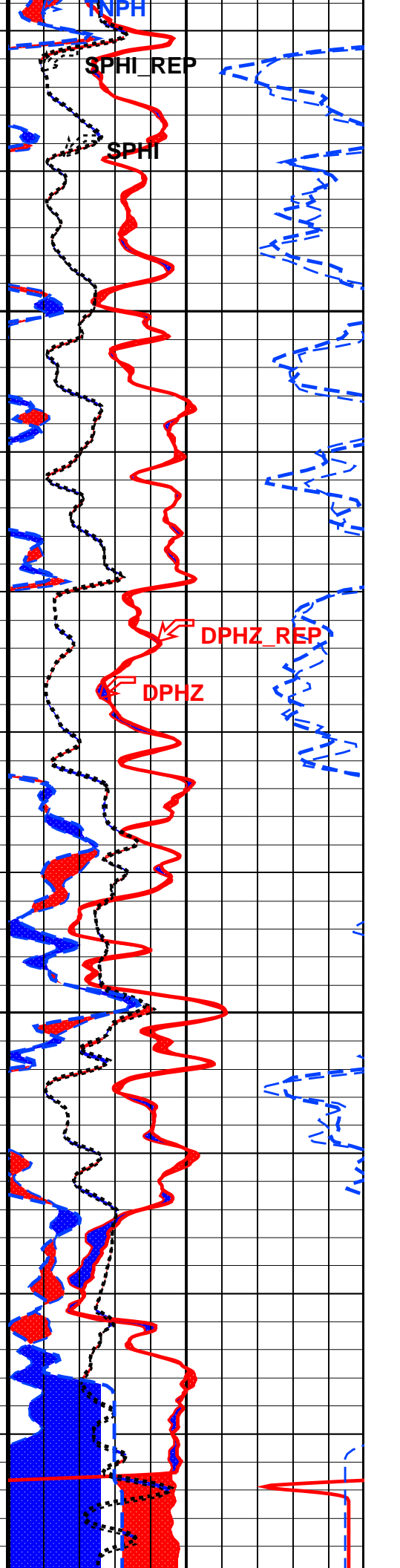
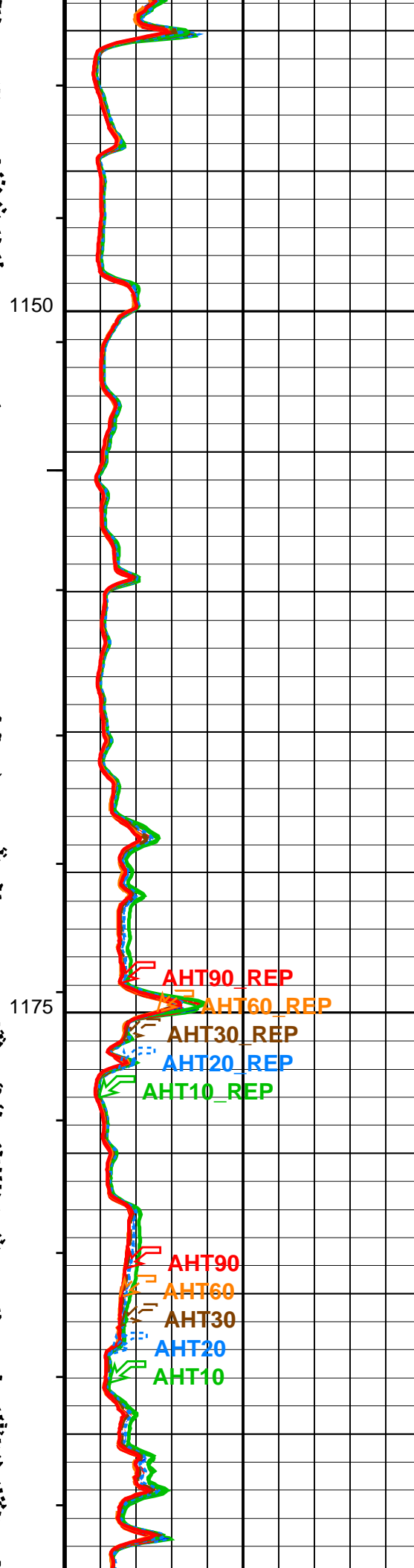
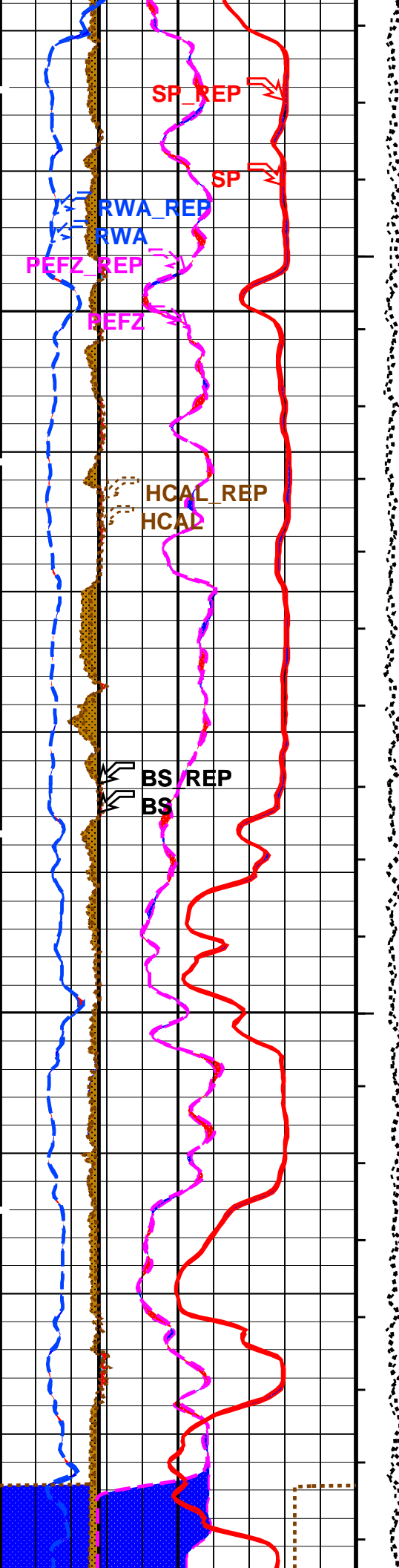
MCM

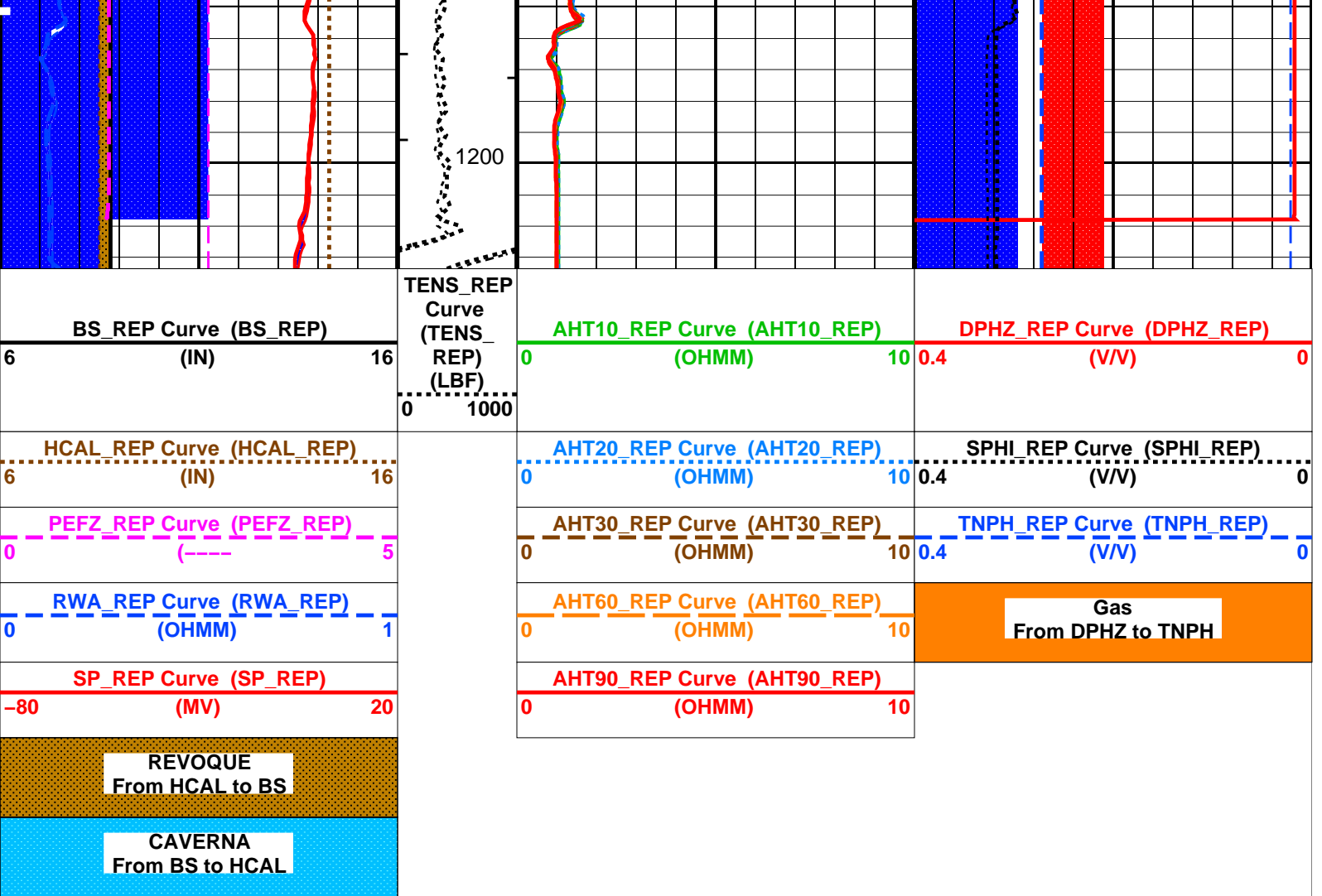
PIP SUMMARY

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

Time Mark Every 60 S







PIP SUMMARY

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

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HAIT-H: Array Induction Tool - H		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
AHBHV	Array Induction Borehole Correction Code Version Number	900
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHBLV	Array Induction Basic Logs Code Version Number	223
AHCDE	Array Induction Casing Detection Enable	Yes
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20
AHMRF	Array Induction Mud Resistivity Factor	1
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20
AHRFV	Array Induction Radial Profiling Code Version Number	701
AHRPV	Array Induction Radial Parametrization Code Version Number	232
AHSTA	Array Induction Tool Standoff	1.5 IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	54 DEGC
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	0.81
FPHI	Form Factor Porosity Source	SPHI
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	1 DEG
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST
GTSE	Generalized Temperature Selection	HSTS_HTEM
MATC	Rock Matrix for Neutron Porosity Corrections	SANDSTONE
RTRC	RTCO - Rt Invasion Correction	YES
SHT	Surface Hole Temperature	20 DEGC

SPNV	SP Next Value	-6	MV
DSLTH: Digitizing Sonic Logging Tool			
CDTS	C-Delta-T Shale	100	US/F
DTF	Delta-T Fluid	204.5	US/F
DTM	Delta-T Matrix	56	US/F
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DT	
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	54	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
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	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.65	G/C3
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	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
RWA: Apparent Water Resistivity			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	0.81	
FPHI	Form Factor Porosity Source	SPHI	
RTCO	RTCO - Rt Invasion Correction	YES	
ALLRES: Basic Resistivity Transforms			
ARTS	AIT Rt Selection (for ALLRES computation)	AITH_TwoResA90	
RTCO	RTCO - Rt Invasion Correction	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	54	DEGC
FCD	Future Casing (Outer) Diameter	5.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	1	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HVCS	Integrated Hole Volume Caliper Selection	HCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
TDL	Total Depth - Logger	1202.00	M
System and Miscellaneous			
BS	Bit Size	8.750	IN
BSAL	Borehole Salinity	1000.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	32.30	LB/F
DFD	Drilling Fluid Density	1.15	G/C3
DO	Depth Offset for Playback	0.9	M
DORL	Depth Offset for Repeat Analysis	0.0	M
FLEV	Fluid Level	0.00	M
MST	Mud Sample Temperature	23.00	DEGC
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	1.1400	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1202	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

HAIT-H
HILTB-FTBSRPC-3624-Q2_2008_OP16
SRPC-3624-Q2_2008_OP16DSLTL-H
DTC-H16C0-147
16C0-147

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_024PUP	FN:44	PRODUCER	30-Sep-2008 16:34	1203.4 M	349.0 M
DEFAULT	AIT_SONIC_TLD_MCFL_013LUP	FN:20	PRODUCER	30-Sep-2008 14:11	1205.2 M	1007.5 M

Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_026PUP	FN:48	PRODUCER	30-Sep-2008 16:44		
CLIENTE_RUN_1	AIT_SONIC_TLD_MCFL_026PUC	FN:49	CUSTOMER	30-Sep-2008 16:44		



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MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_011LUP	FN:14	PRODUCER	30-Sep-2008 12:57	380.4 M	296.7 M
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Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_067PUP	FN:115	PRODUCER	01-Oct-2008 00:53	360.0 M	349.0 M
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Integrated Hole/Cement Volume Summary

Hole Volume = 0.23 M3

Cement Volume = 0.18 M3 (assuming 5.50 IN casing O.D.)

Computed from 360.0 M to 357.1 M using data channel(s) HCAL

OP System Version: 16C0-147

MCM

HAIT-H
HILTB-FTBSRPC-3624-Q2_2008_OP16
SRPC-3624-Q2_2008_OP16DSLTL-H
DTC-H16C0-147
16C0-147

PIP SUMMARY

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

Time Mark Every 60 S

CAVERNA
From BS to HCALREVOQUE
From HCAL to BS

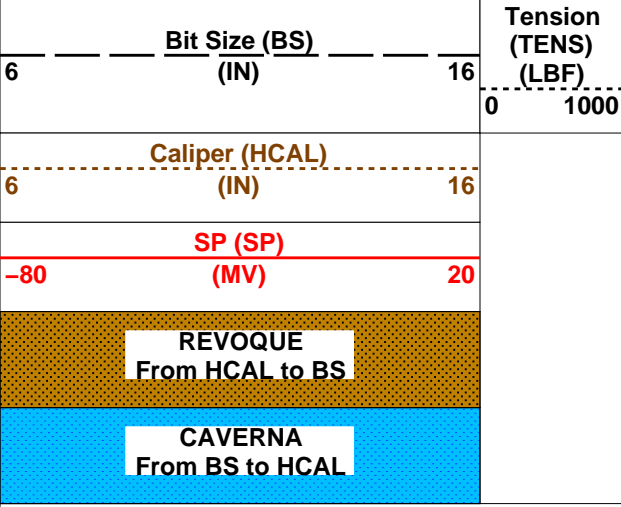
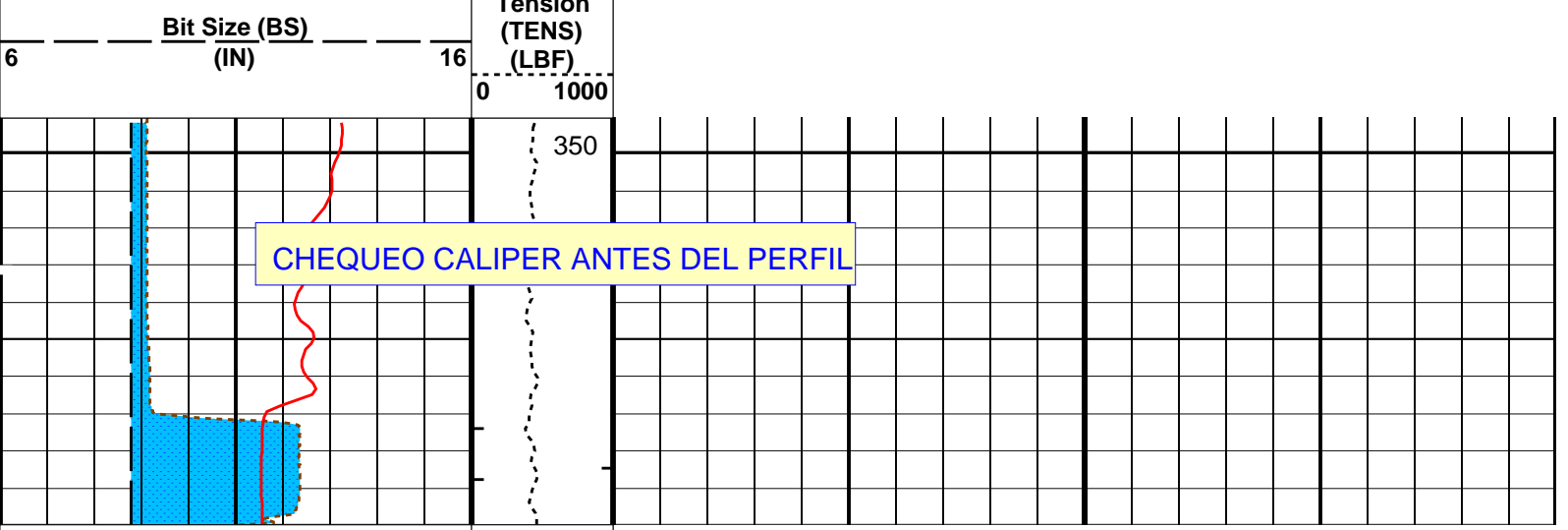
SP (SP)

-80 (MV) 20

Caliper (HCAL)

6 (IN) 16

Tension



PIP SUMMARY

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

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SPNV	HAIT-H: Array Induction Tool - H SP Next Value	-6 MV
FCD	HOLEV: Integrated Hole/Cement Volume Future Casing (Outer) Diameter	5.5 IN
HVCS	Integrated Hole Volume Caliper Selection	HCAL
BS	System and Miscellaneous Bit Size	8.750 IN
DO	Depth Offset for Playback	0.2 M
PP	Playback Processing	NORMAL
TD	Total Depth	1202 M

Format: CALIPER Vertical Scale: 1:200

Graphics File Created: 01-Oct-2008 00:53

OP System Version: 16C0-147
MCM

HAIT-H	SRPC-3624-Q2_2008_OP16	DSLTH-H	16C0-147
HILTB-FTB	SRPC-3624-Q2_2008_OP16	DTC-H	16C0-147

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_011LUP	FN:14	PRODUCER	30-Sep-2008 12:57	380.4 M	296.7 M
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Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_067PUP	FN:115	PRODUCER	01-Oct-2008 00:53
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Input DLIS Files

DEFAULT AIT_SONIC_TLD_MCFL_011LUP FN:14 PRODUCER 30-Sep-2008 12:57 380.4 M 296.7 M

Output DLIS Files

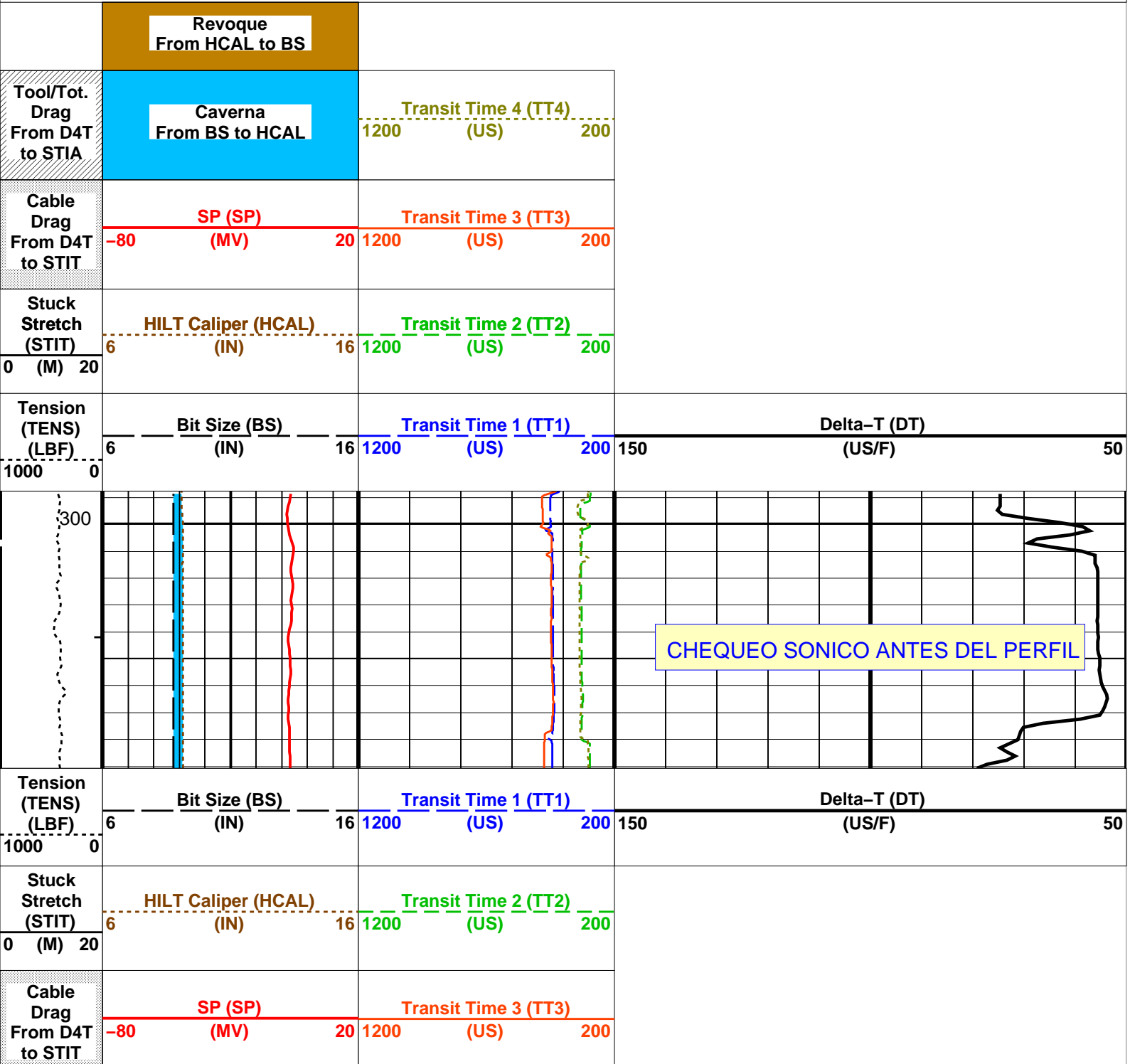
DEFAULT AIT_SONIC_TLD_MCFL_069PUP FN:117 PRODUCER 01-Oct-2008 00:55 309.1 M 298.7 M

OP System Version: 16C0-147 MCM

HAIT-H SRPC-3624-Q2_2008_OP16 DSLT-H 16C0-147
HILTB-FTB SRPC-3624-Q2_2008_OP16 DTC-H 16C0-147

PIP SUMMARY

- └ Integrated Transit Time Minor Pip Every 1 MS
- └ Integrated Transit Time Major Pip Every 10 MS
- Time Mark Every 60 S



Tool/Tot. Drag From D4T to STIA	Caverna From BS to HCAL	Transit Time 4 (TT4)	
		1200	200 (US)
	Revoque From HCAL to BS		

PIP SUMMARY

- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SPNV	HAIT-H: Array Induction Tool - H SP Next Value	-6 MV
	DSLTL-H: Digitizing Sonic Logging Tool	
	Telemetry Mode	DSLCL_FTB
	DSLTL Firing Mode	BHC
AMSG	Auxiliary Minimum Sliding Gate	140 US
CBAF	CBL Adjustment Factor	1
CBLG	CBL Gate Width	45 US
DDEL	Digitizing Delay	200 US
DIVL	DSLTL Depth Sampling Interval	20
DRCS	DSLTL DLIS Recording Size	100
DSIN	Digitizing Sample Interval	10
DTFS	DSLCL Telemetry Frame Size	236
DWCO	Digitizing Word Count	100
GAI	Manual Gain	40
ITTS	Integrated Transit Time Source	DT
MAHTR	Manual High Threshold Reference	114
MGAJ	Maximum Gain	60
MNHTR	Minimum High Threshold Reference	80
NMSG	Near Minimum Sliding Gate	250 US
NMXG	Near Maximum Sliding Gate	750 US
RATE	Firing Rate	R15
SFAF	Sonic Formation Attenuation Factor	0 DB/M
SGCL	Sliding Gate Closing Delta-T	250 US/F
SGDT	Sliding Gate Delta-T	65 US/F
SGW	Sliding Gate Width	80 US
SLEV	Signal Level for AGC	5105
WAGC	Waveform AGC Allow/Disallow	OFF
WMOD	Waveform Firing Mode	FULL
	STI: Stuck Tool Indicator	
LBFR	Trigger for MAXIS First Reading Label	TDL
STKT	STI Stuck Threshold	0.762 M
TDD	Total Depth - Driller	1201.00 M
TDL	Total Depth - Logger	1202.00 M
	System and Miscellaneous	
BS	Bit Size	8.750 IN
DO	Depth Offset for Playback	0.2 M
PP	Playback Processing	NORMAL

Format: SONIC Vertical Scale: 1:200

Graphics File Created: 01-Oct-2008 00:55

OP System Version: 16C0-147

MCM

HAIT-H	SRPC-3624-Q2_2008_OP16	DSLTL-H	16C0-147
HILTB-FTB	SRPC-3624-Q2_2008_OP16	DTC-H	16C0-147

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_011LUP	FN:14	PRODUCER	30-Sep-2008 12:57	380.4 M	296.7 M
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Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_069PUP	FN:117	PRODUCER	01-Oct-2008 00:55
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Input DLIS Files

Output DLIS Files

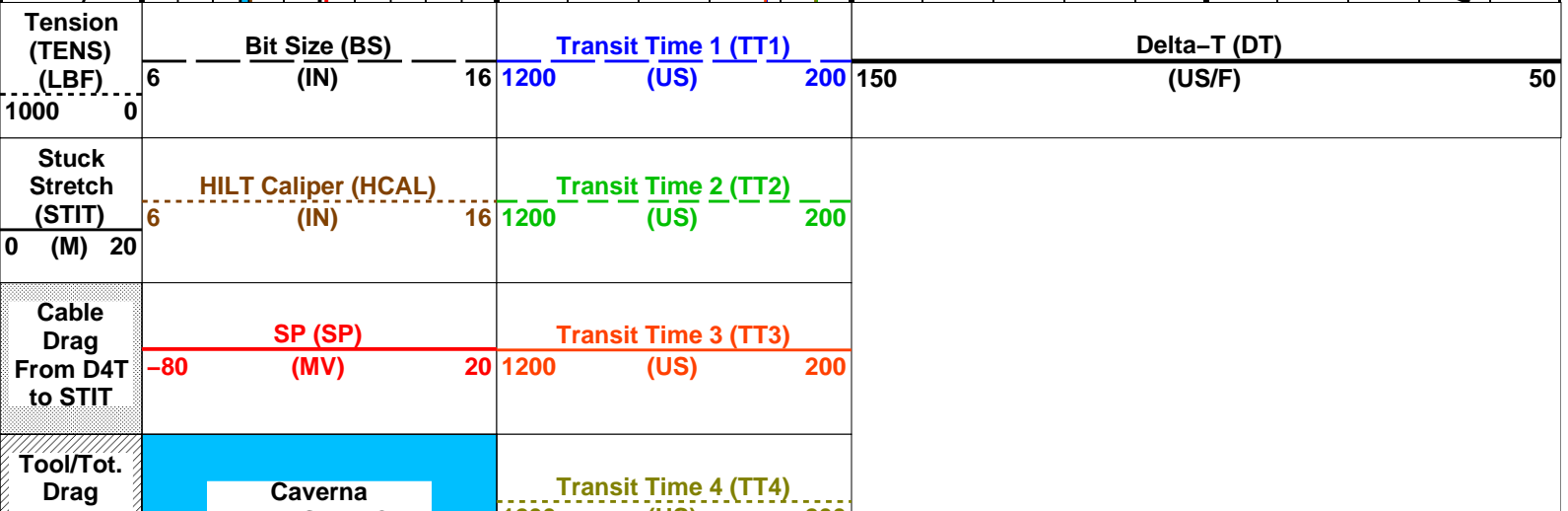
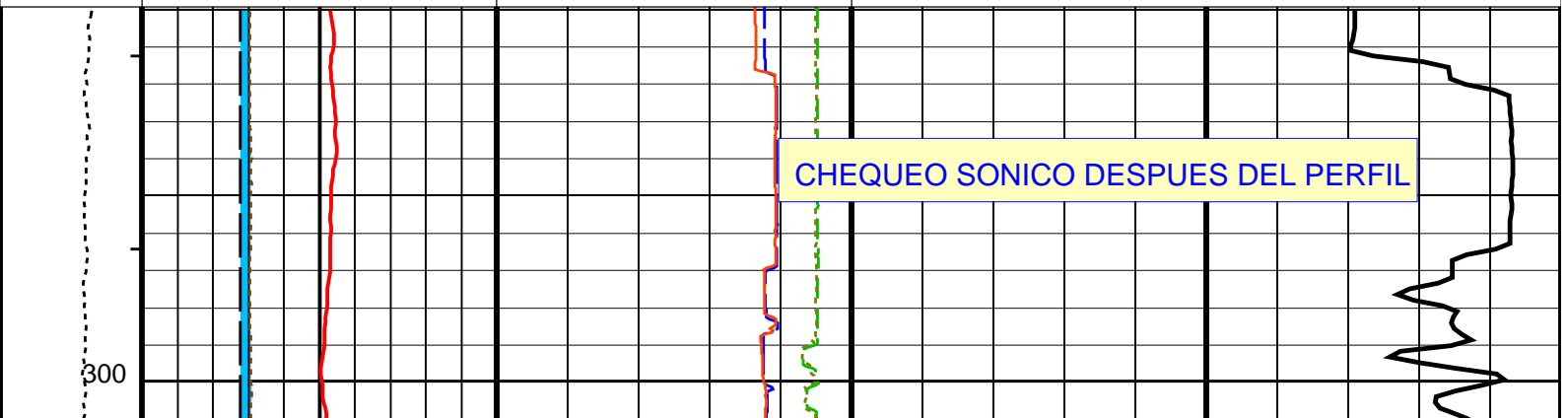
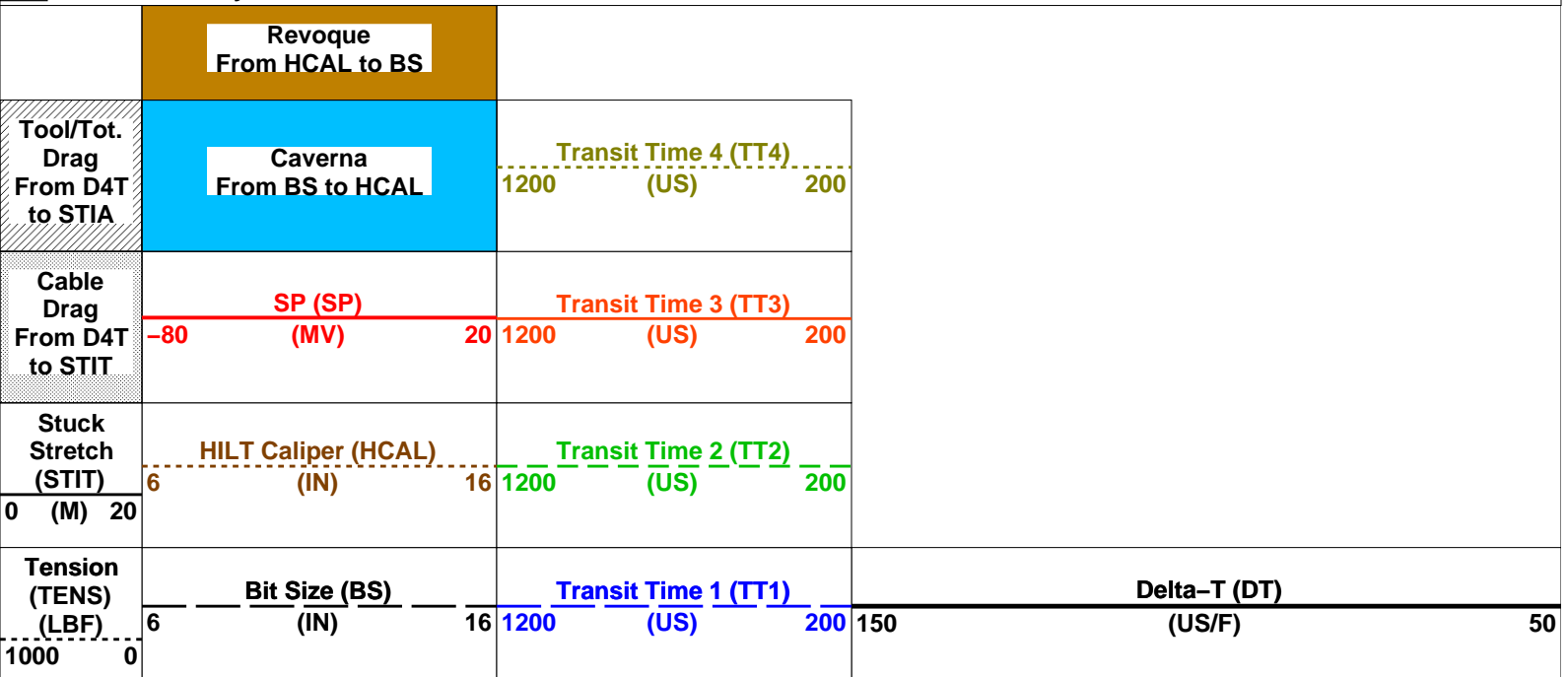
OP System Version: 16C0-147

MCM

HAIT-H SRPC-3624-Q2_2008_OP16 DSLT-H 16C0-147
 HILTB-FTB SRPC-3624-Q2_2008_OP16 DTC-H 16C0-147

PIP SUMMARY

- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS
- Time Mark Every 60 S



From D4T to STIA	From BS to HCAL	1200	(US)	200
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Revoque
From HCAL to BS

PIP SUMMARY

- Integrated Transit Time Minor Pip Every 1 MS
- Integrated Transit Time Major Pip Every 10 MS
- Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
SPNV	HAIT-H: Array Induction Tool - H SP Next Value	-6 MV
	DSLTL-H: Digitizing Sonic Logging Tool Telemetry Mode	DSLCL_FTB
	DSLTL Firing Mode	BHC
AMSG	Auxiliary Minimum Sliding Gate	140 US
CBAF	CBL Adjustment Factor	1
CBLG	CBL Gate Width	45 US
DDEL	Digitizing Delay	200 US
DIVL	DSLTL Depth Sampling Interval	20
DRCS	DSLTL DLIS Recording Size	100
DSIN	Digitizing Sample Interval	10
DTFS	DSLTL Telemetry Frame Size	236
DWCO	Digitizing Word Count	100
GAI	Manual Gain	40
ITTS	Integrated Transit Time Source	DT
MAHTR	Manual High Threshold Reference	114
MGAJ	Maximum Gain	60
MNHTR	Minimum High Threshold Reference	80
NMSG	Near Minimum Sliding Gate	250 US
NMXG	Near Maximum Sliding Gate	750 US
RATE	Firing Rate	R15
SFAF	Sonic Formation Attenuation Factor	0 DB/M
SGCL	Sliding Gate Closing Delta-T	250 US/F
SGDT	Sliding Gate Delta-T	65 US/F
SGW	Sliding Gate Width	80 US
SLEV	Signal Level for AGC	5105
WAGC	Waveform AGC Allow/Disallow	OFF
WMOD	Waveform Firing Mode	FULL
	STI: Stuck Tool Indicator	
LBFR	Trigger for MAXIS First Reading Label	TDL
STKT	STI Stuck Threshold	0.762 M
TDD	Total Depth - Driller	1201.00 M
TDL	Total Depth - Logger	1202.00 M
	System and Miscellaneous	
BS	Bit Size	8.750 IN
DO	Depth Offset for Playback	0.0 M
PP	Playback Processing	NORMAL

Format: SONIC Vertical Scale: 1:200 Graphics File Created: 01-Oct-2008 01:04

OP System Version: 16C0-147
MCM

HAIT-H	SRPC-3624-Q2_2008_OP16	DSLTL-H	16C0-147
HILTB-FTB	SRPC-3624-Q2_2008_OP16	DTC-H	16C0-147

Input DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_016LUP	FN:29	PRODUCER	30-Sep-2008 14:38	1203.4 M	267.3 M
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Output DLIS Files

DEFAULT	AIT_SONIC_TLD_MCFL_074PUP	FN:122	PRODUCER	01-Oct-2008 01:04
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CALIBRACIONES

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
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Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase

Master: 8-Sep-2008 11:55 Before: 30-Sep-2008 12:19

Thru Cal Magnitude – 0	0	0.6264	0.6325	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.286	1.299	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6373	0.6437	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7195	0.7264	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.349	1.361	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.958	1.977	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.965	1.985	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.398	1.410	N/A	N/A	N/A	V
Phase – 0	0	78.63	78.97	N/A	N/A	N/A	DEG
Phase – 1	0	77.55	77.89	N/A	N/A	N/A	DEG
Phase – 2	0	73.89	74.21	N/A	N/A	N/A	DEG
Phase – 3	0	73.13	73.44	N/A	N/A	N/A	DEG
Phase – 4	0	66.96	67.26	N/A	N/A	N/A	DEG
Phase – 5	0	65.14	65.42	N/A	N/A	N/A	DEG
Phase – 6	0	65.09	65.37	N/A	N/A	N/A	DEG
Phase – 7	0	61.67	61.80	N/A	N/A	N/A	DEG

Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Auxilliary

Master: 8-Sep-2008 11:55 Before: 30-Sep-2008 12:19

Array Induction SPA Plus	990.5	991.5	991.5	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	0.1283	0.1385	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	0.9184	0.9184	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.0001301	0.0001428	N/A	N/A	N/A	V

Array Induction Tool – H Wellsite Calibration – Test Loop Gain Correction

Master: 8-Sep-2008 11:55

Test Loop Gain Magnitude – 0	0	1.020	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 1	0	1.022	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 2	0	1.021	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 3	0	1.022	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 4	0	1.005	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 5	0	1.020	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 6	0	1.032	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 7	0	1.035	N/A	N/A	N/A	N/A	V
Phase – 0	0	-0.07829	N/A	N/A	N/A	N/A	DEG
Phase – 1	0	1.032	N/A	N/A	N/A	N/A	DEG
Phase – 2	0	-0.03754	N/A	N/A	N/A	N/A	DEG
Phase – 3	0	-0.3348	N/A	N/A	N/A	N/A	DEG
Phase – 4	0	0.1659	N/A	N/A	N/A	N/A	DEG
Phase – 5	0	0.1639	N/A	N/A	N/A	N/A	DEG
Phase – 6	0	0.4698	N/A	N/A	N/A	N/A	DEG
Phase – 7	0	0.09904	N/A	N/A	N/A	N/A	DEG

Array Induction Tool – H Wellsite Calibration – Sonde Error Correction

Master: 8-Sep-2008 11:55

R Sonde Error Correction – 0	0	-11.91	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	147.9	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	109.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	61.20	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	23.87	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	12.26	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	9.613	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-0.4900	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	236.3	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	128.1	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	-42.07	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	104.8	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	30.33	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	24.74	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	9.650	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	-1.031	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool – H Wellsite Calibration – Mud Gain Correction

Master: 8-Sep-2008 11:55

Coarse – Mag, Real, Imag – 0	0	1.173	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 1	0	1.173	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 2	0	1.173	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 0	0	1.171	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 1	0	1.171	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 2	0	1.171	N/A	N/A	N/A	N/A

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

Before: 30–Sep–2008 12:23

BS Window Ratio	0.7364	N/A	0.7333	N/A	N/A	N/A	
BS Window Sum	33030	N/A	32840	N/A	N/A	N/A	CPS
SS Window Ratio	0.4837	N/A	0.4832	N/A	N/A	N/A	
SS Window Sum	13150	N/A	13100	N/A	N/A	N/A	CPS
LS Window Ratio	0.2936	N/A	0.2888	N/A	N/A	N/A	
LS Window Sum	1472	N/A	1463	N/A	N/A	N/A	CPS

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

Before: 30–Sep–2008 12:23

BS PM High Voltage (Command)	1477	N/A	1555	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1743	N/A	1780	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1517	N/A	1516	N/A	N/A	N/A	V

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

Before: 30–Sep–2008 12:23

BS Crystal Resolution	11.11	N/A	11.67	N/A	N/A	N/A	%
SS Crystal Resolution	9.689	N/A	9.548	N/A	N/A	N/A	%
LS Crystal Resolution	8.699	N/A	8.820	N/A	N/A	N/A	%

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

Before: 30–Sep–2008 12:27

Raw B0 Resistivity	3875	N/A	3885	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3824	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3826	N/A	N/A	N/A	OHMM

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

Before: 30–Sep–2008 12:23

HILT Caliper Zero Measurement	8.000	N/A	8.228	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.69	N/A	N/A	N/A	IN

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

Before: 30–Sep–2008 12:19

Gamma Ray Background	30.00	N/A	34.63	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	175.4	N/A	175.4	N/A	N/A	15.95	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: 25–Sep–2008 15:08 Before: 30–Sep–2008 12:20

CNTC Background	26.54	26.54	26.94	N/A	N/A	3.981	CPS
CFTC Background	29.56	29.56	26.39	N/A	N/A	4.434	CPS

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

Master: 25–Sep–2008 15:08

Thermal Near Corr. (Tank)	5800	5200	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2125	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.447	N/A	N/A	N/A	N/A	

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

Before: 30–Sep–2008 12:19

Z–Axis Acceleration	9.810	N/A	9.789	N/A	N/A	N/A	M/S2
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High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results

Master: 15–Sep–2008 13:02

Rho Aluminum	2.596	2.602	---	---	---	---	G/C3
Rho Magnesium	1.686	1.686	---	---	---	---	G/C3
Pe Aluminum	2.570	2.572	---	---	---	---	
Pe Magnesium	2.650	2.619	---	---	---	---	

High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary

Master: 15–Sep–2008 13:02

BS Average Deviation	0	0.3946	---	---	---	---	%
BS Max Deviation	0	1.129	---	---	---	---	%
SS Average Deviation	0	0.2980	---	---	---	---	%
SS Max Deviation	0	1.223	---	---	---	---	%
LS Average Deviation	0	0.7824	---	---	---	---	%
LS Max Deviation	0	1.845	---	---	---	---	%

The GLS–VJ source activity is acceptable.

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

NCT-B Water Temperature 20.7 DEGC.
 Thermal Housing Size 3.372 IN.
 NSR-F serial number 1531

Array Induction Tool – H / Equipment Identification

Primary Equipment:
 Rm/SP Bottom Nose AHRM – A
 Array Induction Sonde AHIS – BA 25

Auxiliary Equipment:

Array Induction Tool – H Wellsite Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6264		0.6050	78.63		71.00
	Before	0.6325			78.97		
1	Master	1.286		1.270	77.55		70.00
	Before	1.299			77.89		
2	Master	0.6373		0.6230	73.89		66.00
	Before	0.6437			74.21		
3	Master	0.7195		0.7040	73.13		65.00
	Before	0.7264			73.44		
4	Master	1.349		1.337	66.96		59.00
	Before	1.361			67.26		
5	Master	1.958		1.955	65.14		57.00
	Before	1.977			65.42		
6	Master	1.965		1.955	65.09		57.00
	Before	1.985			65.37		
7	Master	1.398		1.415	61.67		53.00
	Before	1.410			61.80		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)		Nom + 60.00 (Maximum)
Master: 8-Sep-2008 11:55				Before: 30-Sep-2008 12:19			

Array Induction Tool – H Wellsite Calibration					
Electronics Calibration Check – Auxilliary					
Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		991.5	Master		0.1283
Before		991.5	Before		0.1385
941.0 (Minimum)		990.5 (Nominal)	1040 (Maximum)	-50.00 (Minimum)	
			0 (Nominal)		50.00 (Maximum)
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.9184	Master		0.0001301
Before		0.9184	Before		0.0001428
0.8700 (Minimum)		0.9150 (Nominal)	0.9600 (Maximum)	-0.05000 (Minimum)	
			0 (Nominal)		0.05000 (Maximum)
Master: 8-Sep-2008 11:55			Before: 30-Sep-2008 12:19		

Array Induction Tool – H Wellsite Calibration				
Test Loop Gain Correction				
Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG
0	1.020		-0.07829	

	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.022			1.032		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.021			-0.03754		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.022			-0.3348		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	1.005			0.1659		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	1.020			0.1639		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.032			0.4698		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.035			0.09904		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master: 8-Sep-2008 11:55

Array Induction Tool – H Wellsite Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-11.91				236.3		
	-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	147.9				128.1		
	114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	109.6				-42.07		
	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	61.20				104.8		
	39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	23.87				30.33		
	15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	12.26				24.74		
	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.613				9.650		
	5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-0.4900				-1.031		
	-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 8-Sep-2008 11:55

Array Induction Tool – H Wellsite Calibration							
Mud Gain Correction							
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag	
0	1.173				1.171		
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.173				1.171		
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.173				1.171		
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Array Induction Tool – H Master Calibration								
Electronics Calibration Check – Thru Cal Mag. & Phase								
Idx	Phase	Value	Thru Cal Magnitude V		Nominal	Value	Phase DEG	Nominal
0	Master	0.6264			0.6050	78.63		71.00
1	Master	1.286			1.270	77.55		70.00
2	Master	0.6373			0.6230	73.89		66.00
3	Master	0.7195			0.7040	73.13		65.00
4	Master	1.349			1.337	66.96		59.00
5	Master	1.958			1.955	65.14		57.00
6	Master	1.965			1.955	65.09		57.00
7	Master	1.398			1.415	61.67		53.00
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)		(Nominal)	Nom + 60.00 (Maximum)

Array Induction Tool – H Master Calibration									
Electronics Calibration Check – Auxilliary									
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value		
Master			991.5	Master			0.1283		
		941.0 (Minimum)	990.5 (Nominal)	1040 (Maximum)			-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
Phase	Array Induction Temperature Plus V		Value	Phase	Array Induction Temperature Zero V		Value		
Master			0.9184	Master			0.0001301		
		0.8700 (Minimum)	0.9150 (Nominal)	0.9600 (Maximum)			-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)

Array Induction Tool – H Master Calibration									
Test Loop Gain Correction									
Idx	Value	Test Loop Gain Magnitude V		Value	Phase DEG				
0	1.020			-0.07829					
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.022			1.032					
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.021			-0.03754					
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.022			-0.3348					
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	1.005			0.1659					
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	1.020			0.1639					
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.032			0.4698					
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	1.035			0.09904					
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Array Induction Tool – H Master Calibration					
Sonde Error Correction					
Idx	Value	R Sonde Error Correction MM/M		Value	X Sonde Error Correction MM/M
0	-11.91			236.3	

		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	147.9				128.1			
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	109.6				-42.07			
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	61.20				104.8			
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	23.87				30.33			
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	12.26				24.74			
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.613				9.650			
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-0.4900				-1.031			
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 8-Sep-2008 11:55

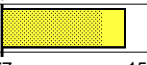
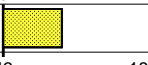

Array Induction Tool – H Master Calibration										
Mud Gain Correction										
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag				
0	1.173					1.171				
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		
1	1.173					1.171				
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		
2	1.173					1.171				
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		

Master: 8-Sep-2008 11:55

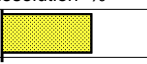
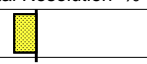
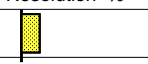
High resolution Integrated Logging Tool–DTS / Equipment Identification			
Primary Equipment:			
HILT high–Resolution Mechanical Sonde	HRMS – B	1876	
HILT Rxo Gamma–ray Device	HRGD – B	5714	
HILT Micro Cylindrically Focused Log Dev	MCFL –		
GR Logging Source	GLS – VJ	3767	
HILT High Res. Control Cartridge	HRCC – B	1918	
HILT Gamma–Ray Neutron Sonde–DTS	HGNS – B	1931	
HGNS Gamma–Ray Device	HGR –		
HGNS Neutron Detector with Alpha Source	HCNT –		
Auxiliary Equipment:			
Neutron Calibration Tank	NCT – B		
Gamma Source Radioactive	GSR – U/Y	2604	
HGNS Housing	HGNH –	1962	

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					0.7333	Before					0.4832	Before					0.2888
	0.6996 (Minimum)	0.7364 (Nominal)	0.7732 (Maximum)			0.4595 (Minimum)	0.4837 (Nominal)	0.5079 (Maximum)			0.2789 (Minimum)	0.2936 (Nominal)	0.3082 (Maximum)				
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value			
Before					32840	Before					13100	Before					1463
	31380 (Minimum)	33030 (Nominal)	34680 (Maximum)			12490 (Minimum)	13150 (Nominal)	13800 (Maximum)			1399 (Minimum)	1472 (Nominal)	1546 (Maximum)				

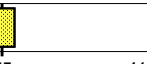
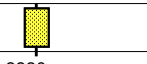
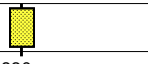
Before: 30-Sep-2008 12:23

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			1780	Before			1516
	1377 (Minimum)	1477 (Nominal)	1577 (Maximum)		1643 (Minimum)	1743 (Nominal)	1843 (Maximum)		1417 (Minimum)	1517 (Nominal)	1617 (Maximum)


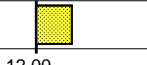
Before: 30-Sep-2008 12:23

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			11.67	Before			9.548	Before			8.820
	10.11 (Minimum)	11.11 (Nominal)	12.11 (Maximum)		8.689 (Minimum)	9.689 (Nominal)	10.69 (Maximum)		7.699 (Minimum)	8.699 (Nominal)	9.699 (Maximum)


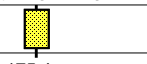

Before: 30-Sep-2008 12:23

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			3885	Before			3824	Before			3826
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)

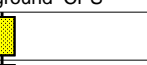
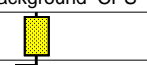

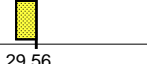
Before: 30-Sep-2008 12:27

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			8.228	Before			12.69
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)

Before: 30-Sep-2008 12:23

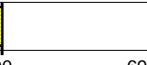
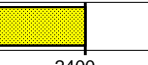
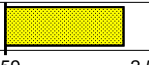
High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Detector Calibration											
Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig - Bkg) GAPI		Value	Phase	Gamma Ray (Calibrated) GAPI		Value
Before			34.63	Before			175.4	Before			165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		159.5 (Minimum)	175.4 (Nominal)	191.3 (Maximum)		150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)

Before: 30-Sep-2008 12:19

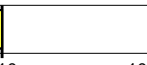
High resolution Integrated Logging Tool-DTS Wellsite Calibration							
Zero Measurement							
Phase	CNTC Background CPS		Value	Phase	CFTC Background CPS		Value
Master			26.54	Master			29.56
Before			26.94	Before			26.39
	5.000 (Minimum)	26.54 (Nominal)	40.00 (Maximum)		5.000 (Minimum)	29.56 (Nominal)	40.00 (Maximum)

Master: 25-Sep-2008 15:08

Before: 30-Sep-2008 12:20

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			5200	Master			2125	Master			2.447
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 25-Sep-2008 15:08

High resolution Integrated Logging Tool-DTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration M/S2	Value
Before		9.789
	9.610 (Minimum)	9.810 (Nominal)
		10.01 (Maximum)

High resolution Integrated Logging Tool-DTS Master Calibration					
Inversion results					
Phase	Rho Aluminum G/C3	Value	Phase	Rho Magnesium G/C3	Value
Master		2.602	Master		1.686
	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		2.572	Master		2.619
	2.470 (Minimum) 2.570 (Nominal) 2.670 (Maximum)			2.550 (Minimum) 2.650 (Nominal) 2.750 (Maximum)	

Master: 15-Sep-2008 13:02

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		0.3946	Master		0.2980	Master		0.7824
	-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		1.129	Master		1.223	Master		1.845
	-1.600 (Minimum) 0 (Nominal) 1.600 (Maximum)			-2.500 (Minimum) 0 (Nominal) 2.500 (Maximum)			-3.500 (Minimum) 0 (Nominal) 3.500 (Maximum)	

Master: 15-Sep-2008 13:02

High resolution Integrated Logging Tool-DTS Master Calibration					
Zero Measurement					
Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		26.54	Master		29.56
	5.000 (Minimum) 26.54 (Nominal) 40.00 (Maximum)			5.000 (Minimum) 29.56 (Nominal) 40.00 (Maximum)	

Master: 25-Sep-2008 15:08

High resolution Integrated Logging Tool-DTS Master Calibration								
Tank Measurement								
Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value
Master		5200	Master		2125	Master		2.447
	4700 (Minimum) 5800 (Nominal) 6900 (Maximum)			1900 (Minimum) 2400 (Nominal) 2900 (Maximum)			2.120 (Minimum) 2.159 (Nominal) 2.540 (Maximum)	

Master: 25-Sep-2008 15:08

DTS Telemetry Tool / Equipment Identification		
Primary Equipment:		
DTC-H Auxiliary Cartridge	DTCH - A	
DTC-H Telemetry Cartridge	DTCH - A	8950
Auxiliary Equipment:		
DTCH Telemetry Cartridge Housing	ECH - KC	10030

COMPANIA: YPF S.A. POZO: YPF.Ch.Gbk-761	PRIMERA LECTURA	1199.6 m
	PROFUNDIDAD PERFIL	1202 m
	PROF. PERFORADOR	1201 m

CAMPO: GRIMBEEK
PROVINCIA: CHUBUT
PAIS: ARGENTINA

BUJE DE VASTAGO	655.55 m
MESA ROTATIVA	655.25 m
NIVEL TERRENO	649.75 m

COMBINADA

Schlumberger

ESCALA: 1/200

POZO: YPF.Ch.Gbk-761

YACIMIENTO: GRIMBEEK

EQUIPO: 382 SAN ANTONIO INTERNACIONAL SRL.

FECHA: 25 de septiembre de 2008

COMPAÑIA: SCHLUMBERGER ARGENTINA S.A.

OPERACIÓN SOLICITADA

1 INDUCCIÓN MULTIPLE	IM	De fondo (1200 m. aprox.) hasta zapato caño guía	358,13 m.
2 CALIBRE	CAL	De fondo (1200 m. aprox.) hasta zapato caño guía	358,13 m.
3 DENSIDAD LITOLÓGICA	DLT	En profundidades y tramos a determinar en el pozo.	
4 NEUTRON COMPENSADO	NC	En profundidades y tramos a determinar en el pozo.	
5 SÓNICO COMPENSADO	SC	De fondo (1200 m. aprox.) hasta zapato caño guía	358,13 m.
6 RESONANCIA MAGNÉTICA EXPRESS (1)	MRX	En profundidades y tramos a determinar en el pozo.	
7 MULTIENSAYADOR EXPRESS	ME (XPT)	En profundidades y cantidad de medidas a determinar en el pozo.	

SERVICIOS OPCIONALES

1 TESTIGOS por IMPACTO	TLP	En profundidades y cantidad de testigos a determinar en el pozo.
------------------------	-----	--

OBSERVACIONES:

(1) El modo de registro de la RESONANCIA MAGNÉTICA EXPRESS será determinado en el pozo.

a)- Modo Basico (BMR)

b)- Modo Completo SP (Saturación Profiling).

PROCESAMIENTOS de DATOS

(2)

IMPORTANTE: Antes de comenzar la operación se debe estimar el tiempo de duración de la misma. Si dicho tiempo de operación se estima en más de 12:00 Hs consecutivas, se debe, indefectiblemente, solicitar el reemplazo del personal involucrado con tiempo suficiente a fin de evitar pérdidas de tiempo innecesarias.

POZO LISTO: A CONFIRMAR

DATOS DEL POZO

PROFUNDIDAD FINAL:	1200 m.	Aproximadamente
DIAMETRO TREPANO:	8 3/4 " 8,750	← (Confirmar diámetro de trepano en el pozo)
DIAMETRO CAÑO GUIA:	9 5/8 " 9,625	
PROFUNDIDAD ZAPATO CAÑO GUIA:	358,13 m.	

PEP: RS1EC.8E01.53.P0004

UWI: AR0100007663

NOTA: FIRMAR y ADJUNTAR A LA HOJA DE TIEMPO y TICKET



**COORDENADAS
y COTA
DEFINITIVAS**

Pozo: Gbk-761

Datum: PAMPA DEL CASTILLO

COORDENADA X: 4.952.293,10
COORDENADA Y: 2.596.846,29
COTA s/n/t: 649,75 m.

Datum: CAMPO INCHAUSPE

COORDENADA X: 4.952.418,01
COORDENADA Y: 2.596.722,33
COTA s/n/t: 649,75 m.

Datum: WGS-84

LATITUD: 45°34'35,0398" S
LONGITUD: 67°45'43,0109" O
ALTITUD a/s/e: 664,14 m.

Servicios profesionales
en topografía e hidrografía

Posicionamiento satelital
GPS - RTK



Guillermo Silvestre
AGRIMENSOR

0297 444 1220 / 155 924744
gdsilvestre@speedy.com.ar
9000 Comodoro Rivadavia
Chubut / Patagonia Argentina

YACIMIENTO: MANANTIALES BEHR

ZONA: GRIMBEEK

PROVINCIA: CHUBUT

DISTRITO:

POZO: Gbk-761

BATERIA:

FECHA: 25-SEPTIEMBRE-2008

OPERADOR:

Guillermo D. Silvestre
AGRIMENSOR

DATOS A LLENAR

CARGAR DATOS

POZO	Gbk-761
BATERIA	GRIMBEEK
EQUIPO	KEY-8
FECHA	04/10/2009
RUBRO	TERMINACION
COSTO OBJETIVO	100.000
NOMBRE DEL PROYECTO	TERMINACION
N°DE GRAFO	
PEP:	RS1EC.8E01.53.P0004
ZONA	GRIMBEEK
FLUIDO DE TRABAJO	AGUA DE REC. SECUNDARIA
FINALIZO PERFORACION	2 de octubre de 2008
ULTIMA INTERVENCION	ESPERA TERMINACIÓN

COORDENADAS

X	4.952.295,00
Y	2.596.852,00
Z	649,00

COMPAÑIAS DE SERVICIO

CABLE	GEOLOG
TORRE	KEY ENERGY SERVICES
CEMENTACION	SCHLUMBER
ESTIMULACION	BJ
MOTOR DE FONDO	TASSAROLI
COILED TUBING	-

PARA PUNZAR

CAÑÓN Ø	Cañón Ø 4"	4" ó 5"
TIROS POR PIE	4 TxP 32 Grs	4

CASING

EN BOCA DE POZO Ø Y mts.	5 1/2"	Ejemplos 7" a 23
DIAMETRO Y LIBRAJE	5 1/2" 14-15,5-17 #	5-1/2" 15,5
5 1/2"	12,50	15,0
6 5/8"	18,54	0,0
7"	20,60	0,0
9 5/8"	39,40	14,1
Total de m³+5	357	

← **NO TOCAR "PARA USO DEL BACTERICIDA"**

102,39

COLLAR DIFERENCIAL	1.178,59
ZAPATO	1.193,13
PROFUNDIDAD FINAL	1.202,00

INSTALACION FINAL

DEL POZO Sin instalación

MATERIAL DE BOMBEO

DEL POZO Sin instalación

HERRAMIENTA A BAJAR

COLOCAR TIPO DE HTA.Y Ø
CALIBRAR HASTA
HERMETICIDAD DEL CSG DESDE



DIVISION REGIONAL SUR
UNIDAD ECONOMICA CHUBUT - CAÑADON SECO
DISTRITO ZONA CENTRAL

PROGRAMA OPERATIVO del POZO :

Gbk-761SUBREGION : **CH**ZONA : **GRIMBEEK**BAT.**GRIMBEEK**

RUBRO:

PROYECTO: **TERMINACION**COSTO OBJETIVO: **U\$S 100.000**COSTO ESTIMADO: **U\$S 59.690**DIAS ESTIMADOS: **6,38**FLUIDO DE REPARACION: **AGUA DE REC. SECUNDARIA**EQUIPO : **TERMINACION**CANTIDAD: **29,1 m³****PEP: RS1EC.8E01.53.P0004**

COMPAÑIAS ASIGNADAS:

CABLE:	GEOLOG
TORRE:	KEY ENERGY SERVICES
CEMENTACION:	SCHLUMBER
ESTIMULACION:	BJ
MOTOR DE FONDO:	TASSAROLI
COILED TUBING:	-

FINALIZO PERFORACION : **2 de octubre de 2008**ULTIMA INTERVENCION: **ESPERA TERMINACIÓN****OBSERVACIONES:**

COORDENADAS:

X: **4.952.295,00**Y: **2.596.852,00**COTA: Z: **649,00****Altura mesa Rotary: 3,5 m****Elevación mesa Rotary: - m**



RESERVA N°

M. BEHR

04/10/2009

PEP: RS1EC.8E01.53.P0004

UNIDAD ECONOMICA CHUBUT-CDON. SECO
DISTRITO ZONA CENTRAL

X: 4.952.295,00 Z: 649,00
Y: 2.596.852,00

PROGRAMA OPERATIVO : **TERMINACION**

POZO : **Gbk-761** ZONA : **GRIMBEEK** SUBREGION : **CH** BAT. **GRIMBEEK**

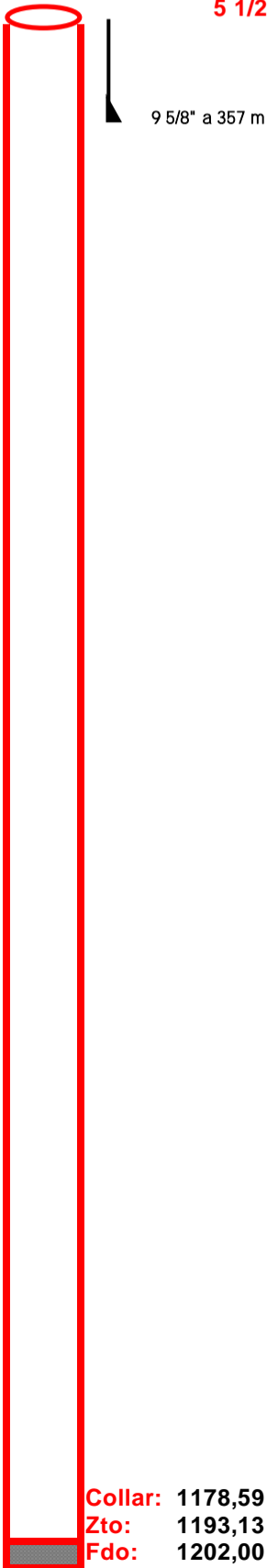
FLUIDO DE REPARACION: **AGUA DE REC. SECUNDARIA** CANTIDAD: **29,1 m³**

INSTALACION FINAL: Sin instalación

INSTALACION BBEO: Sin instalación

EQUIPO: **TERMINACION** COMPAÑIA WIRE LINE: **GEOLOG**

N° 5 1/2" 14-15,5-17 #
CAPA 5 1/2"



PROGRAMA OPERATIVO

Nota:

- 1º) Montar equipo completo, de acuerdo a los procedimientos. Realizar Chek List.
- 2º) Bajar Tubing AMC y dejar nivel de fluido en 500 m.
- 3º) Con buena aislación y previa verificación de correlación punzar en profundidad \varnothing 4" a 4 TPP 32 grs. (0° - 60°).

Inducción	Neutrón	Espesor	
A) 1057,5/59,0		1,5 m	Presión de capa 607 psi
B) 1073,5/76,5		3,0 m	Presión de capa 663 psi

- 7º) Bajar TPN y PKR AMC y ensayar por pistoneo, según se indica con las letras: (**A**) - (**B**)
Estabilizar N, Q e IT.

En caso de extraer hidrocarburos, tomar muestra para análisis y enviar a Epsilon.
En caso de ser Gas, medir presiones y tomar muestra.

- 8º) De acuerdo a los resultados de los ensayos, se indicara programa a seguir.

Capas con porcentajes de agua mayores a 50 %, consultar antes de dar por finalizado el ensayo.
Capas c/alto porcentaje de agua, tomar muestras y enviar a Epsilon para un análisis completo y resistividad.

Nota: Capas con petroleo tomar una muestra adicional de 2 lts para realizar ensayos de Geoquímica. Entregar a Geología M. Behr

Collar: 1178,59
Zto: 1193,13
Fdo: 1202,00

PRESUPUESTO POZO

Gbk-761

PEP: RS1EC.8E01.53.P0004

CAN.	ITEM	HS.	\$	U\$\$	DESCRIPCION DE MANIOBRAS	
1	3		10,00	20619,00	975,00	DTM Equipo completo, Colocar BOP.
0	6		0,00	0,00	0,00	
10	1		10,00	5892,90	605,20	Trabajos de superficie
15	1		15,00	8839,35	907,80	Viajes con TPN + PKR
36	1		36,00	21214,44	2178,72	Ensayos convencionales (3)
4	1		4,00	2357,16	242,08	Cambios de zona
30	1		30,00	17678,70	1815,60	Baja Instalación final
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
0	1		0,00	0,00	0,00	
12	2A		12,00	6364,32	653,52	Stand By Wireline
0	2A		0,00	0,00	0,00	Stand By opera cia Bolland para toma de muestras
0	2A		0,00	0,00	0,00	Stand By por cierre de pozo
0	2A		0,00	0,00	0,00	Stand By
12	2A		12,00	6364,32	653,52	Stand by por reuniones de seguridad, carga y descarga de mat.
0	2A		0,00	0,00	0,00	
0	2B		0,00	0,00	0,00	Stand by sin personal.
24	2C		24,00	12728,64	1307,04	Equipo parado por inclemencias de tiempo.-

Total Horas incl.DTM	153,00
Total de Días	6,38

***Equipo KEY-8**

RESUMEN		UNI	Tarifa Nueva RTP	
ITEM	CANTIDAD	COSTO	\$	U\$\$
1 (Opert.Normal)	95,00	24.410,06	\$55.982,55	U\$ 5749,40
2A (SB c/Pers.)	24,00	5.549,88	\$12.728,64	U\$ 1307,04
2B (SB s/Pers.)	0,00	0,00	\$0,00	U\$ 0,00
2C (Factor Clima)	24,00	5.549,88	\$12.728,64	U\$ 1307,04
3 (DTM)	1,00	7.847,93	\$20.619,00	U\$ 975,00
3B (C.Sólidas)	0,21	2.479,14	\$7.437,50	U\$ 0,00
3C (Carg.y Desc.)	0,21	0,00	\$0,00	U\$ 0,00
4B (C.Liquidadas)	0,21	2.479,14	\$7.437,50	U\$ 0,00
5 (Pileta Ecol.)	6,00	763,67	\$1.751,40	U\$ 179,88
5A (Tpte.pil.ecol.)	1,00	625,60	\$1.643,66	U\$ 77,72
6 (Conj.DSK-Pieza)	0,00	0,00	\$0,00	U\$ 0,00
7 SUMEX+PEET+SINDICATO	0,21	3.171,56	\$9.514,79	U\$ 0,00
Subtotal	153,00	52.876,87	\$129.843,68	U\$ 9.596,08
Wire	Perfil N Corr.+N F	4.000,00	\$2.783,20	U\$ 2040,00
	Punzado	4.000,00	\$2.783,20	U\$ 2040,00
Line	Fijado de Tapón	0,00	\$0,00	U\$ 0,00
Cementación		0,00	\$0,00	U\$ 0,00
Fractura Hidráulica		0,00	\$0,00	U\$ 0,00
Htas. de fractura		0,00	\$0,00	U\$ 0,00
Estimulación ácida		0,00	\$0,00	U\$ 0,00
Bombeo - Prueba de admisión		0,00	\$0,00	U\$ 0,00
Fresa		1.200,00	\$906,07	U\$ 576,00
Htas de TST		0,00	\$0,00	U\$ 0,00
Hot-Oil + Camión chupa		0,00	\$0,00	U\$ 0,00
Camión Chupa		0,00	\$0,00	U\$ 0,00
Transporte Gasoil		0,00	\$0,00	U\$ 0,00
Coiled Tubing		0,00	\$0,00	U\$ 0,00
Motor de fondo		0,00	\$0,00	U\$ 0,00
Gas-Oil(\$104xm3)		0,00	\$0,00	U\$ 0,00
Alquiler de Radio		0,00	\$0,00	U\$ 0,00
Limpieza de Locación		0,00	\$0,00	U\$ 0,00
Subtotal		9.200,00	\$6.472,47	U\$ 4.656,00
TOTAL		62.076,87	\$136.316,15	U\$ 14.252,08
OBJETIVO (U\$)		100.000	PRESUPUESTO	
Capas punzadas		0	TOTAL EN U\$ 59690,34	
Profundidad		1.202,00	Tipo de cambio: 0,33333	
Nº de Pruebas		0		
Nº de Ensayos		0		

*Seleccionar equipo desde Hoja1
Tarifarios Actualizados al 30/05/08

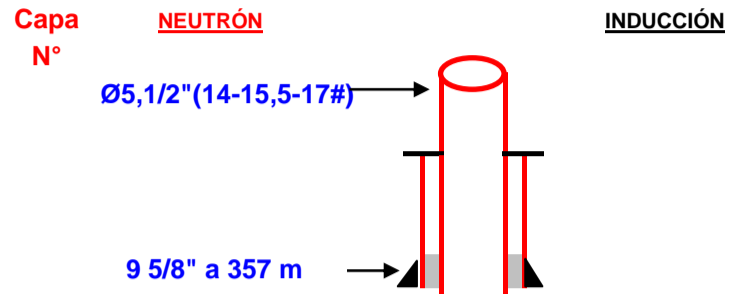


POZO: **Gbk-761**
EQUIPO: **KEY-8**

OBJETO:	TERMINACION	PEP:	RS1EC.8E01.53.P0004
Est.Actual :		OI:	-
PROYECTO:	TERMINACION	COSTO OBJETIVO U\$S:	100.000
CABLE	Cta	FRAC	Acido
M.Fdo.			
PRESUPUESTO \$:			136316,152
GEOLOG	DHLUMBE	BJ	BJ
ASSARO			
PRESUPUESTO U\$S:			14.252,08 -

Inicio:	06/10/2008
Termino:	12/10/2008

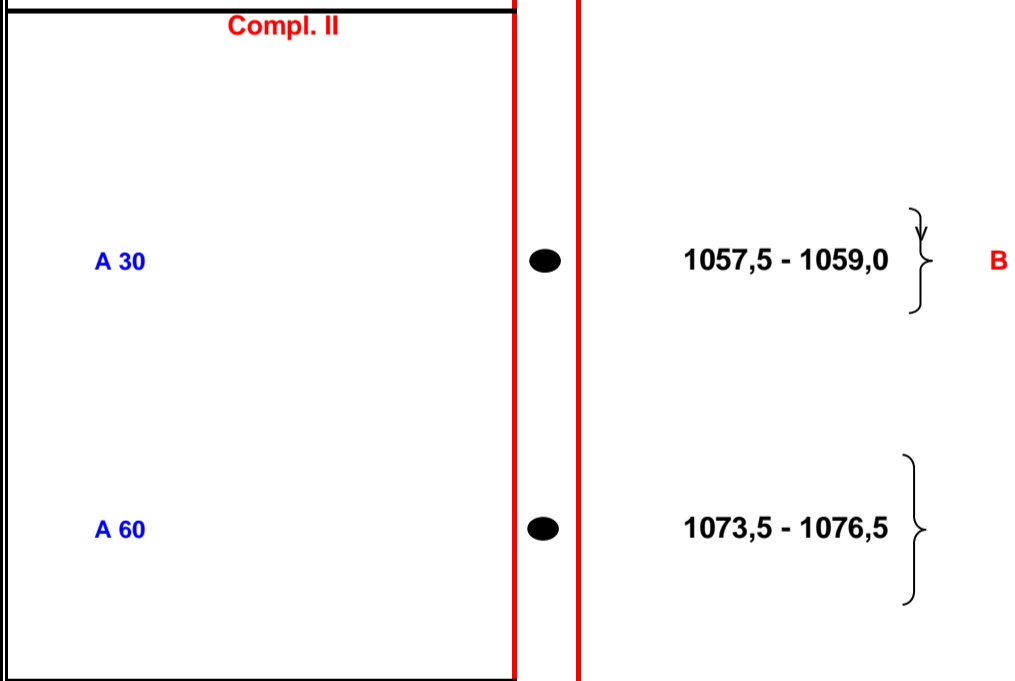
Casing



FLUIDO: AGUA DE REC. SECUNDARIA

Transporta equipo completo sobre 4km
Monta equipo completo. Realiza Check list
Profundiza fresa 120 mm. Hta se asienta en 5,27 m calibra
Baja fresa + MDF y calibra en tramos rotando alcanzando la profundidad de 1176 m
Cía Geolog punza c/4" - 4 TPP - 32 Gr. **1073,5/76,5 - 1057,5/59,0**
Baja Tpn y Pkr ensaya **(A) - (B)**
Baja instalación de producción
Baja bomba PCP insertable + varillas
Desmonta equipo

Prox. MC-139



B 390 l/h - Pleo - N: 910 m - IT: 9 % - AE: 8 % - AB: 1 % - Dens: 0,974.-
Sal: 3,5 - PH: 10 - Temp: 23 °C
8 m relleno s/Tpn

234 l/h - Pleo - N: 986 m - IT: 10 % - AE: 8 % - AB: 2 % - Dens: 0,718.-
Sal: 2 - PH: 7 - Temp: 26 °C
3 m relleno s/Tpn

Collar: 1.178,59
Zap.: 1.193,13
PF: 1202,00

Fondo:1202

REFERENCIAS



Nota:

INST. TBG. C./Pas+filtro+1 tbg+ancla+BHD+115 tbg (2 7/8")
MAT. BBEO: PCP insertable+143 Var. 7/8"+vástago 1 1/4"

PROGRAMA OPERATIVO

- 1º) Montar equipo completo, de acuerdo a los procedimientos. Realizar Chek List.
- 2º) Bajar Tubing AMC y dejar nivel de fluido en 500 m.
- 3º) Con buena aislación y previa verificación de correlación punzar en profundidad \varnothing 4" a 4 TPP 32 grs. (0° - 60°).

	Inducción	Neutrón	Espesor	
A)	1057,5/59,0		1,5 m	Presión de capa 607 psi
B)	1073,5/76,5		3,0 m	Presión de capa 663 psi

- 7º) Bajar TPN y PKR AMC y ensayar por pistoneo, según se indica con las letras: (**A**) - (**B**)
Estabilizar N, Q e IT.

En caso de extraer hidrocarburos, tomar muestra para análisis y enviar a Epsilon.

En caso de ser Gas, medir presiones y tomar muestra.

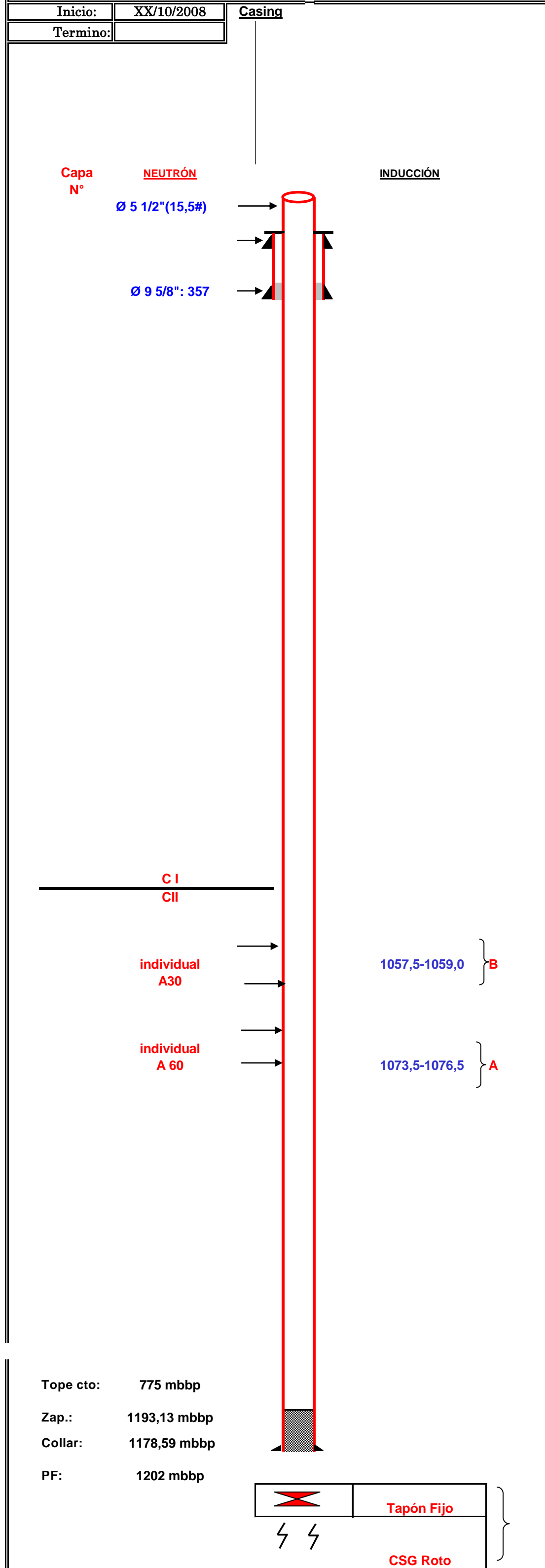
- 8º) De acuerdo a los resultados de los ensayos, se indicara programa a seguir.

Capas con porcentajes de agua mayores a 50 %, consultar antes de dar por finalizado el ensayo.

Capas c/alto porcentaje de agua, tomar muestras y enviar a Epsilon para un análisis completo y resistividad.

Nota: Capas con petroleo tomar una muestra adicional de 2 lts para realizar ensayos de Geoquimica. Entregar a Geologia M. Behr

POZO:	Gbk-761	OBJETO:	TERMINACION	PEP:	RS1EC.8E01.53.P0004			
EQUIPO:	A determinar	Est.Actual :		PROXIMO POZO:	A CONFIRMAR			
Inicio:	XX/10/2008	PROYECTO:		COSTO OBJETIVO U\$S:				
Termino:		CABLE	Cta	FRAC	Acido	M.Fdo.	PRESUPUESTO \$:	-
					-		PRESUPUESTO U\$S:	-
		FLUIDO:		SALINIDAD:	g/l (en pileta)			



- A. Montar Equipo de RTP de acuerdo a procedimientos.
 - B-Si existe buena aislación; punzar con cañón 4" 4TPP 0-60, 32 grs con 10-5 kg/cm2 de sobrebalanc
- | Prof Inducción | Espesor | Capa |
|----------------|---------|------|
| 1057,5-1059,0 | 1,5 | A30 |
| 1073,5-1076,5 | 3 | A 60 |
- C - Ensayar de forma individual como se indica en esquema: **A y B.**
 - D. En caso de extraer hidrocarburo tomar muestras para análisis y enviar a Epsilon.
 - E. En caso de ser gas medir presiones y tomar muestra
 - F. De acuerdo a los resultados consultar pasos a seguir.

**NOTA: CAPAS CON PORCENTAJES DE AGUA MAYORES A 50%:
CONSULTAR ANTES DE DAR POR FINALIZADO ENSAYO**

**NOTA: EN CASO DE ENSAYOS CON RESULTADO AGUA, TOMAR MUESTRA
Y ENVIAR A EPSILON PARA ANÁLISIS COMPLETO DE SALINIDAD**

PROF.(mbbp)	PRESION	MOV.
1058,19	606,5	30,03
1074,38	663,18	9,7
1075,48	664,11	5,9

Preparó: Cevasco C.



POSICIONAMIENTO SATELITAL - G.P.S.
 UBICACION Y TRIANGULACION DE POZOS
 REPLANTEOS GENERALES, OLEODUCTOS
 GASODUCTOS, SISMICAS, MENSURAS, ETC...

J.D. s.r.l. - SERVICIOS TOPOGRAFICOS

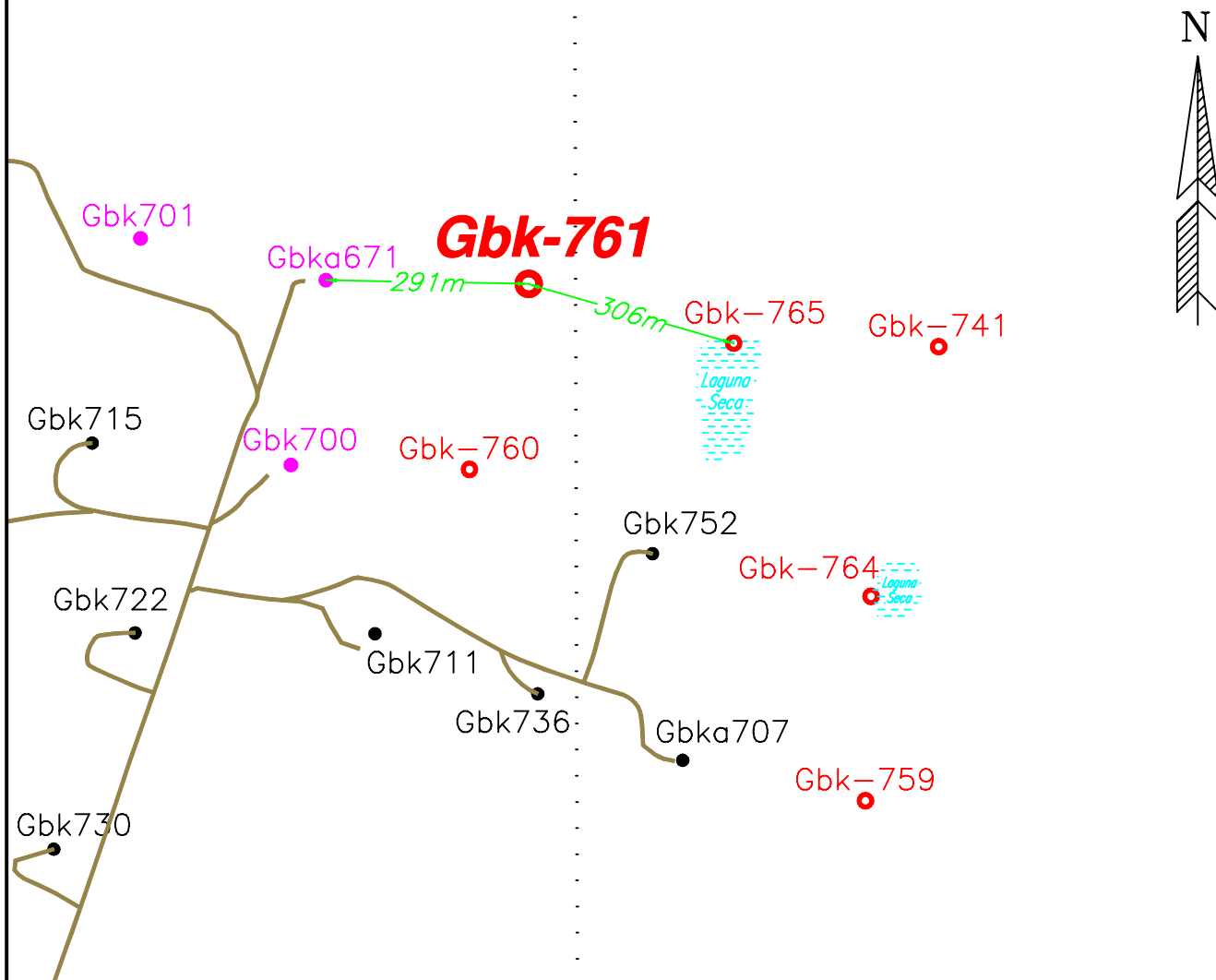
Av. Sargento Cabral 162 - TE(fax): 0297/447-1105
 9000 - Comodoro Rivadavia - Chubut
 E-mail: jdsrl@infovia.com.ar / jd-srl@satlink.com

MONOGRAFIA

CONTRATO: **REPSOL-YPF**
 YACIMIENTO: **MANANTIALES BEHR**
 AREA: **GRIMBEEK**
 PROVINCIA: **CHUBUT**

CROQUIS DE UBICACION: **Gbk-761**

ESCALA APROX.
 1 / 10.000



OBSERVACIONES: LOTE: 40 PROPIETARIO: SUC. CECIL LARI SADLEIR
 UBICADO EN PENDIENTE SUAVE, CORTE 2 A 3m
 CAMINO A ESTUDIAR POR SISMICA 67m AL ESTE

AZIMUT DE ARRANQUE:

SE NAVEGO EL POZO A LAS COORDENADAS
 TEORICAS CON GPS COLOCANDO LA ESTACA
 EN LAS COORDENADAS SOLICITADAS

COMPAÑIA: **REPSOL-YPF**

COORDENADAS: **TEORICAS GRAFICAS**

SISTEMA: **PAMPA DEL CASTILLO**

Gbk-761

X: 4952295.- Y: 2596852.-
 COTA: T/N Aprox.: 649m +/- 3m

COORDENADAS GEOGRAFICAS:(Sistema:

LAT: _____ LON: _____ ELEV: _____

UBICADO POR JD SRL-AV. SGTO CABRAL 162-TE(fax)0297/4471105
 9000 - COMODORO RIVADAVIA - CHUBUT - REPUBLICA ARGENTINA

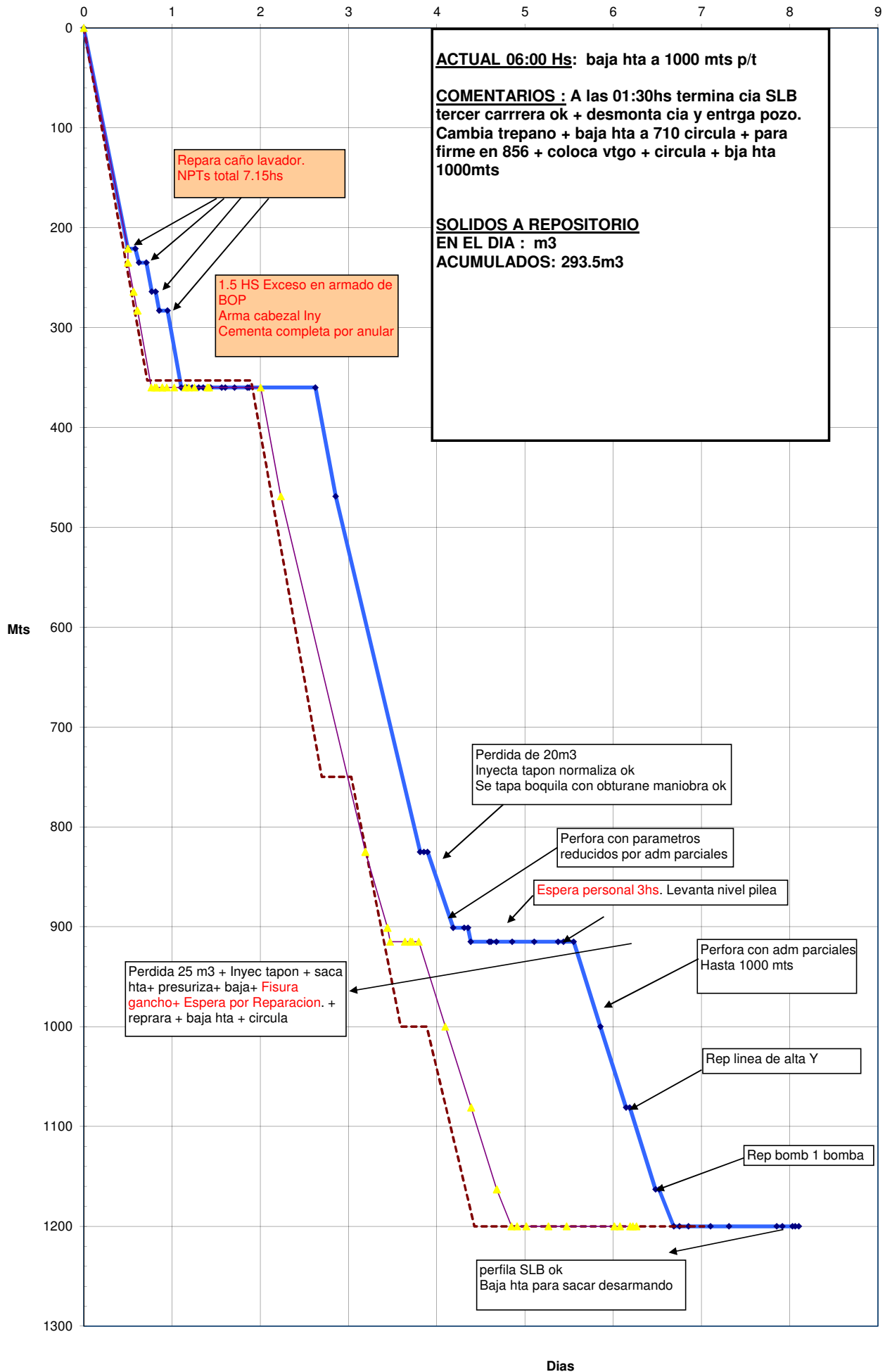
OPERADOR: S. VELASQUEZ REVISO: JD

REMITO N°

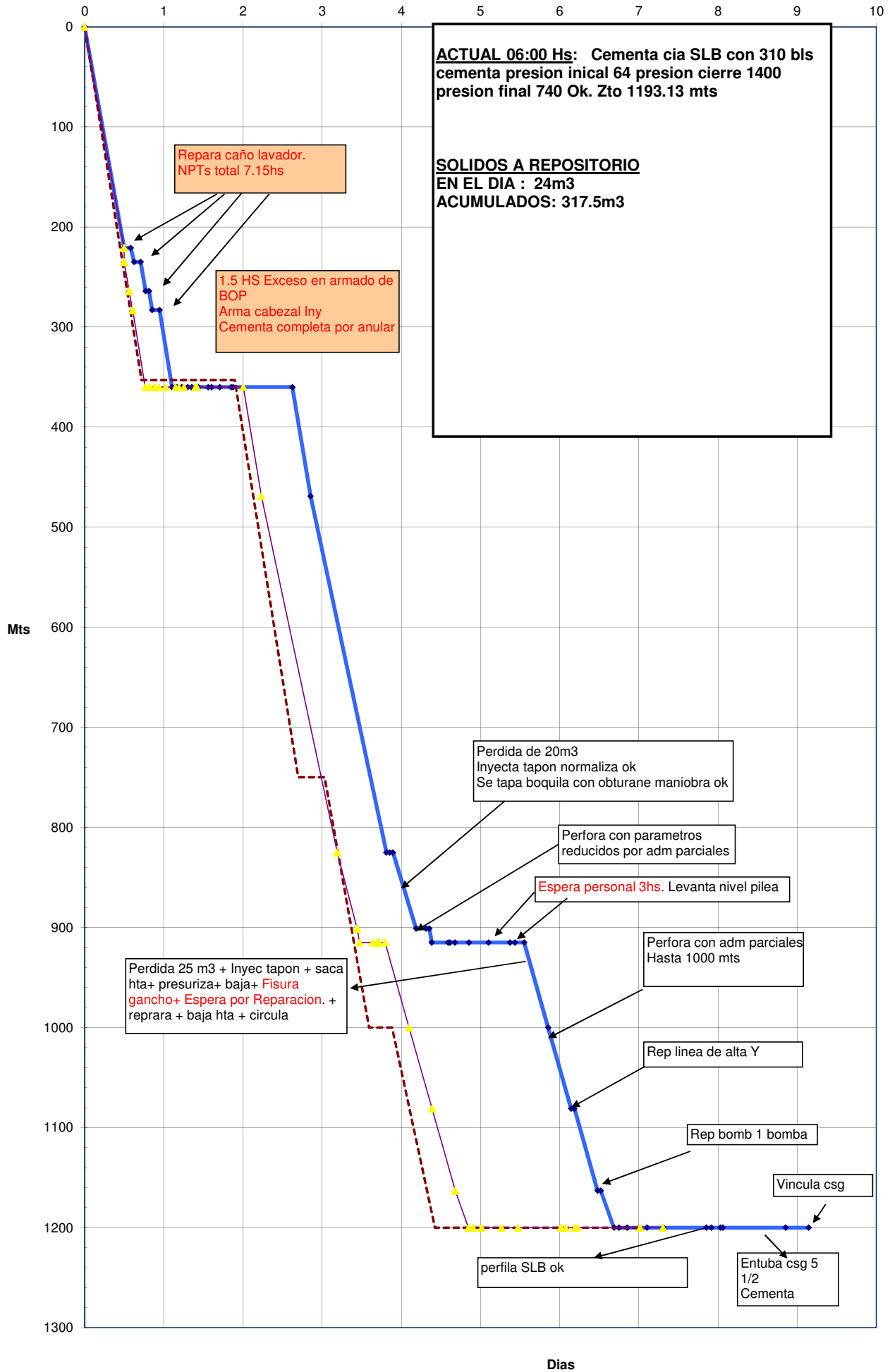
FECHA: 17 de DICIEMBRE de 2007

ESQUEMA DE POZO					
POZO: Gbk-761		COORDENADAS Boca de Pozo		X:	4952295
Vertical		(provisorias)		Y:	2596852
UWI:AR0100007663 PEP: RS1EC.8E01.53.P0004		COTA (msnm)		Z:	649
		PROF.FINAL MD:1200 mbbp (-551 mbnm)			
		Cañería Guía 9 5/8": 350 mbbp		Registros a Cable	
T E R C I A R I O	FM PATAGONIA + SANTA CRUZ	Alternancia de arcillas y arenisca grano fino a medio.	Zona sin interés 750 mts	AIT-SONICO (fondo a guía) CAL,DENS-NEUTRON (Zona de Interés) CMR (tramos a determinar)	
	FM SARMIENTO	TOPE Sarm +/- : 315 (+335) Tobas finas poco consolidadas.			
	FM SALAMANCA + RIO CHICO	TOPE RCh +/- : 370 (+280) Arcilla consolidada y fragmentada, 810mts: Horizonte Glauconítico Gasífero, de baja presión: 11 kg/cm2			
G R U P O	F M. F E L T R E B L O	TOPE CI +/- : 835 (-185) Arcilitas y areniscas intercaladas	ZONA de interés petrolero	RFT (Zona de Interés) Testigos laterales impacto (Opcionales)	
		TOPE CII +/- : 1043 (-394) Areniscas de grano medio a grueso, escaso cemento calcáreo, escasa mtz arcillosa + Arcilitas y limoarcilitas. Presión poral aprox.: 50 Kg/cm2.			
Ref: Gbk.a-671		Observación: Se entubará con casing de 5 1/2" PF: 1200 mbbp Base estimada Fm. Patagonia: 294 mbbp			

Tiempo vs Profundidad

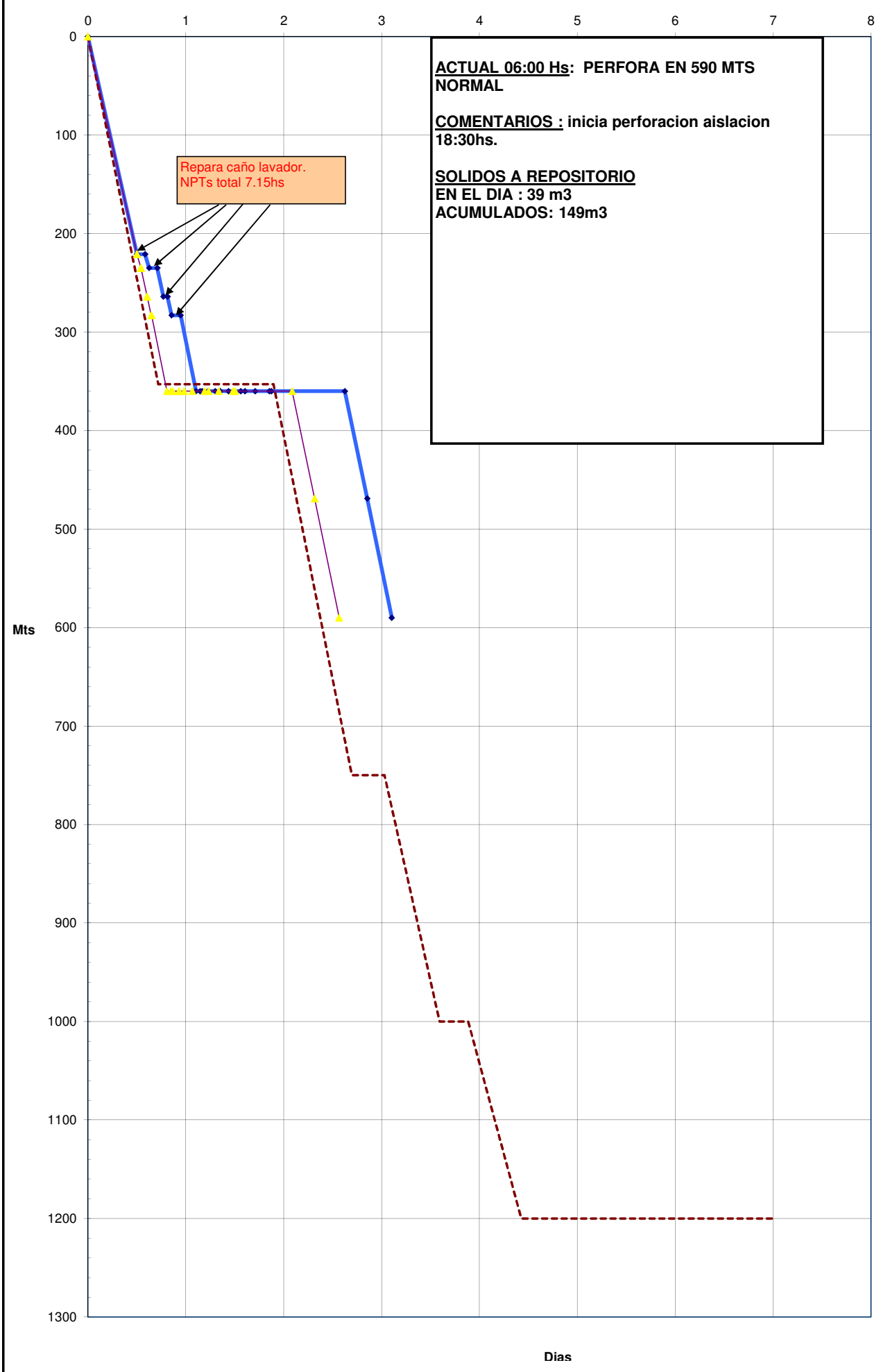


Tiempo vs Profundidad



Dias

Tiempo vs Profundidad



Repara caño lavador.
NPTs total 7.15hs

ACTUAL 06:00 Hs: PERFORA EN 590 MTS NORMAL

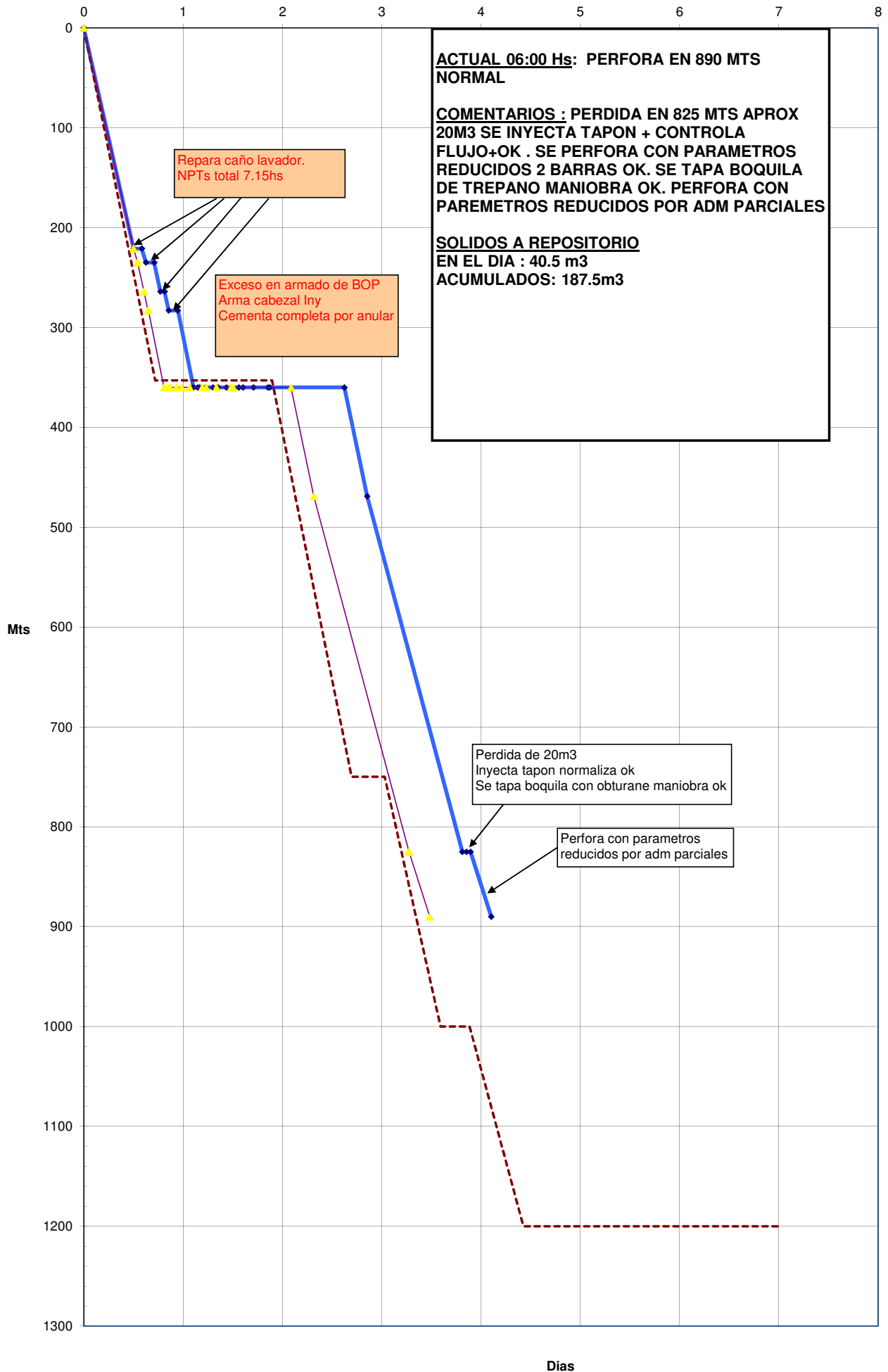
COMENTARIOS : inicia perforacion aislacion 18:30hs.

SOLIDOS A REPOSITORIO
EN EL DIA : 39 m3
ACUMULADOS: 149m3

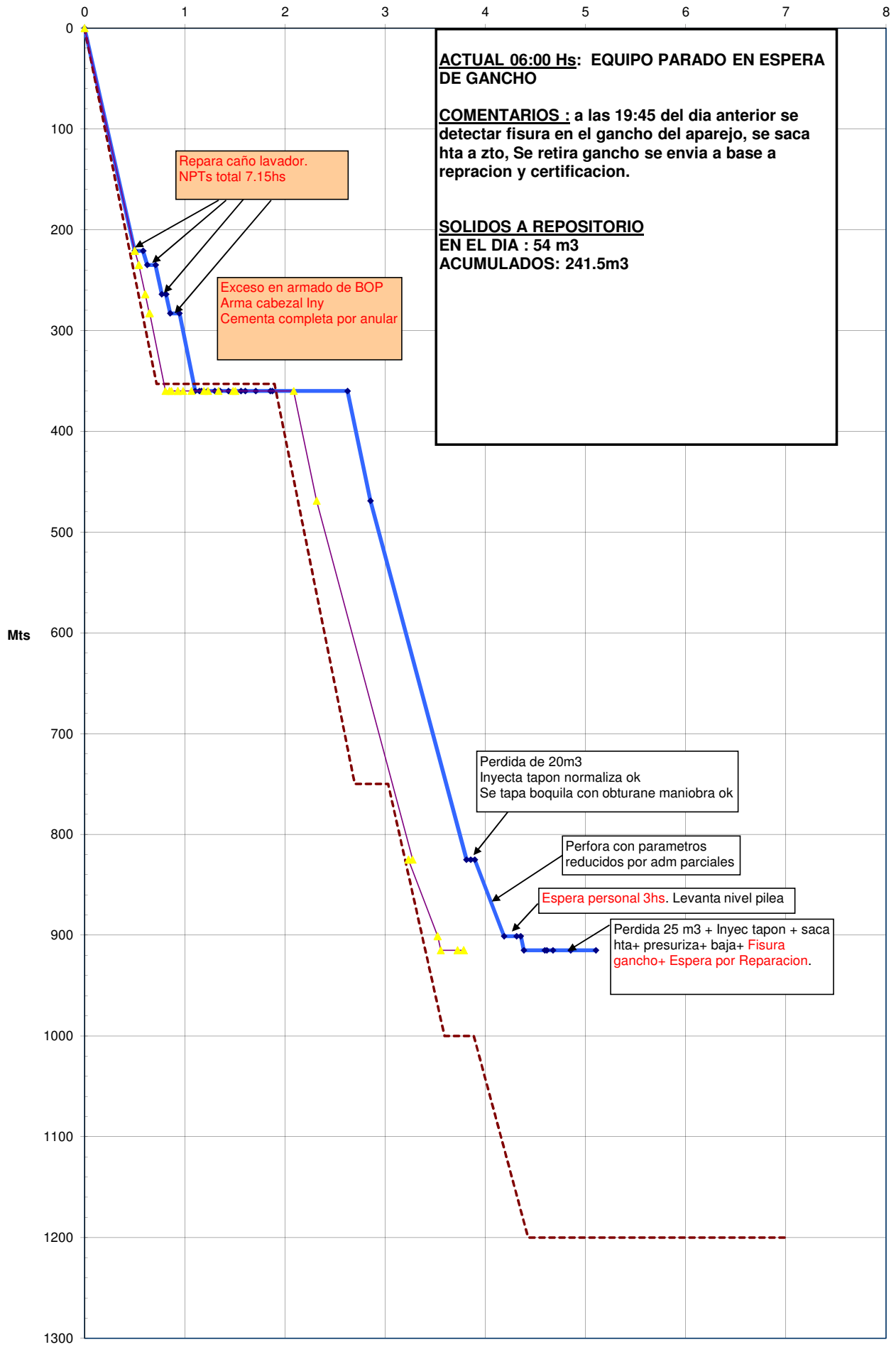
Mts

Dias

Tiempo vs Profundidad



Tiempo vs Profundidad

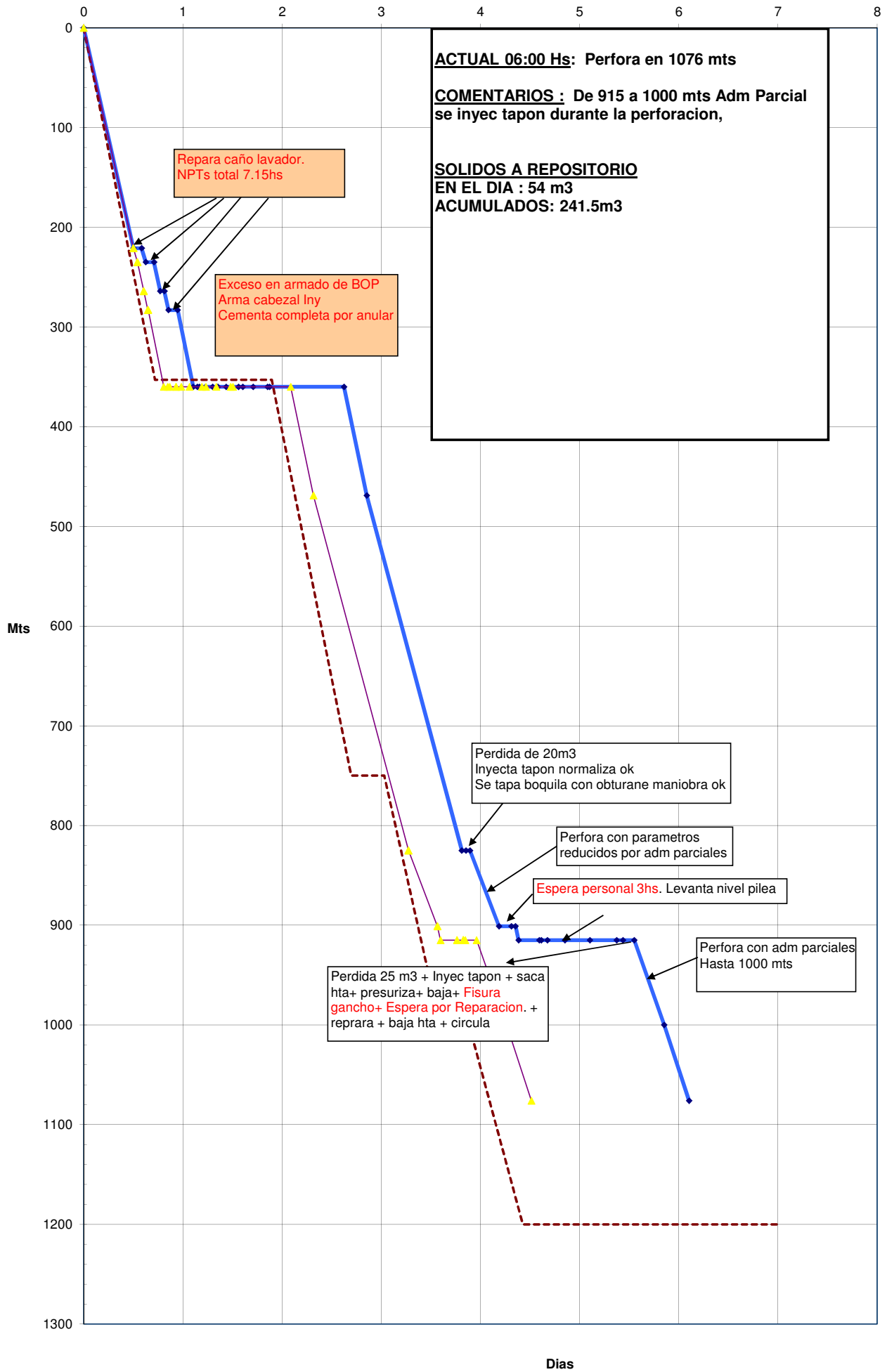


ACTUAL 06:00 Hs: EQUIPO PARADO EN ESPERA DE GANCHO

COMENTARIOS : a las 19:45 del dia anterior se detectar fisura en el gancho del aparejo, se saca hta a zto, Se retira gancho se envia a base a reopracion y certificacion.

SOLIDOS A REPOSITORIO EN EL DIA : 54 m3 ACUMULADOS: 241.5m3

Tiempo vs Profundidad



ACTUAL 06:00 Hs: Perfora en 1076 mts

COMENTARIOS : De 915 a 1000 mts Adm Parcial se inyec tapon durante la perforacion,

SOLIDOS A REPOSITARIO
EN EL DIA : 54 m3
ACUMULADOS: 241.5m3

Repara caño lavador.
 NPTs total 7.15hs

Exceso en armado de BOP
 Arma cabezal Iny
 Cementa completa por anular

Perdida de 20m3
 Inyecta tapon normaliza ok
 Se tapa boquilla con obturane maniobra ok

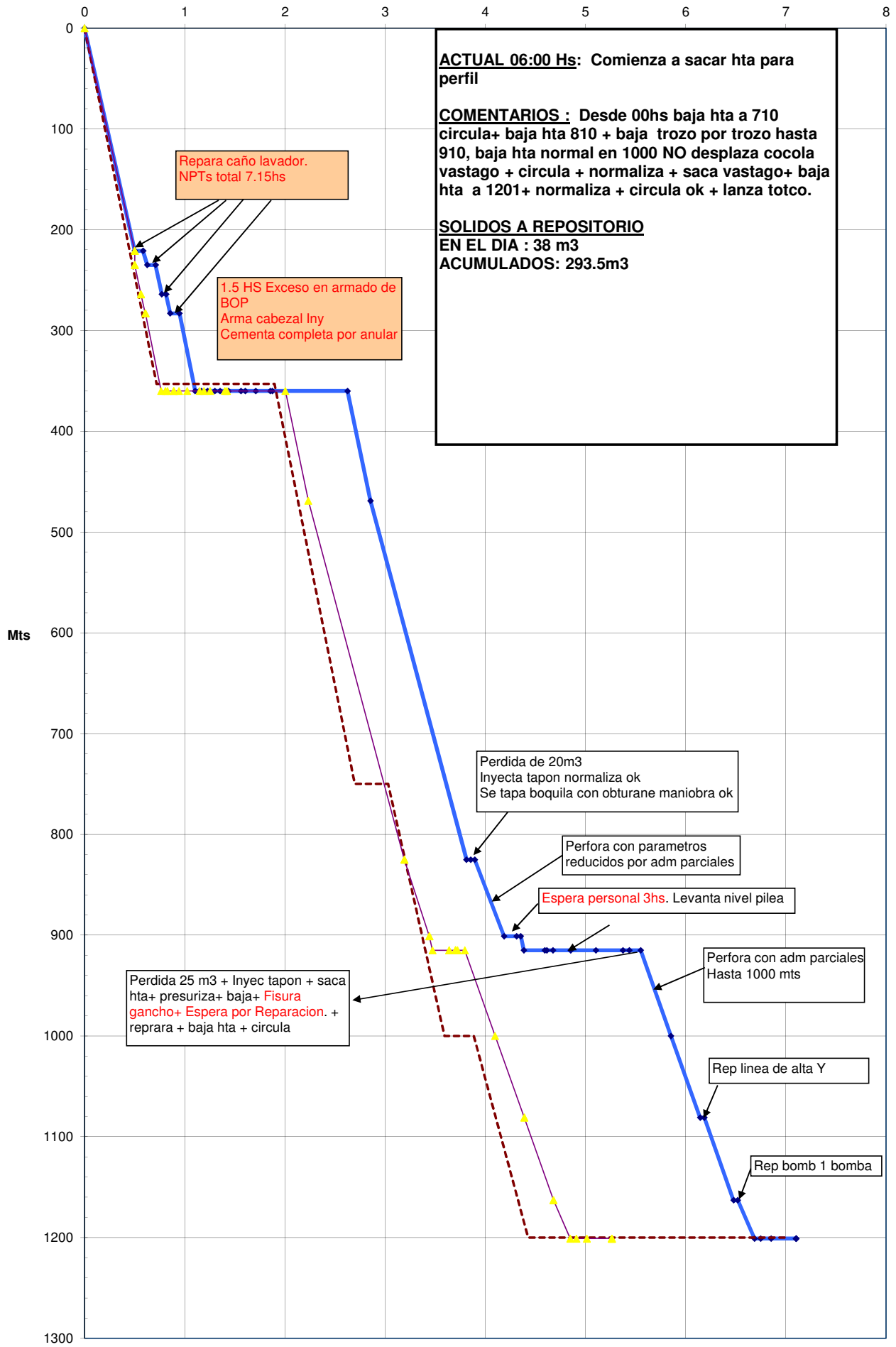
Perfora con parametros
 reducidos por adm parciales

Espera personal 3hs. Levanta nivel pilea

Perfora con adm parciales
 Hasta 1000 mts

Perdida 25 m3 + Inyec tapon + saca
 hta+ presuriza+ baja+ Fisura
 gancho+ Espera por Reparacion. +
 repara + baja hta + circula

Tiempo vs Profundidad



ACTUAL 06:00 Hs: Comienza a sacar hta para perfil

COMENTARIOS : Desde 00hs baja hta a 710 circula+ baja hta 810 + baja trozo por trozo hasta 910, baja hta normal en 1000 NO desplaza coque a vástago + circula + normaliza + saca vástago+ baja hta a 1201+ normaliza + circula ok + lanza totco.

SOLIDOS A REPOSITORIO
EN EL DIA : 38 m³
ACUMULADOS: 293.5m³

Tiempo vs Profundidad

