

HALLIBURTON

ANNULAR HOLE
VOLUME
LOG

COMPANY	OXY USA INC
WELL	HYLBOM B-2
FIELD	GARDEN CITY
COUNTY	KEARNY
STATE	OKLAHOMA
Permanent Datum	GL
Log measured from	KB
Drilling measured from	KB
Date	12-May-12
Run No.	ONE
Depth - Driller	5120.00 ft
Depth - Logger	5117.0 ft
Bottom - Logged Interval	5073 ft
Top - Logged Interval	1829 ft
Casing - Driller	8.625 in @ 1800.0 ft
Casing - Logger	1829.0 ft
Bit Size	7.875 in @
Type Fluid in Hole	WATER BASED MUD
Density	9.3 ppq 42.00 s/qt
PH	9.20 pH 10.0 cp/m
Source of Sample	FLOWLINE
Rm @ Meas. Temperature	1.054 ohmm @ 75.00 degF @
Rmf @ Meas. Temperature	0.87 ohmm @ 75.00 degF @
Rmc @ Meas. Temperature	1.180 ohmm @ 75.00 degF @
Source Rmf	CHART Rmc CHART
Rm @ BHT	0.77 ohmm @ 105.0 degF @
Time Since Circulation	4.0 hr
Time on Bottom	12-May-12 10:11
Max. Rec. Temperature	105.0 degF @ 5117.0 ft @
Equipment	592 PV OK
Recorded By	CORY HANSON
Witnessed By	D. CHATTLE

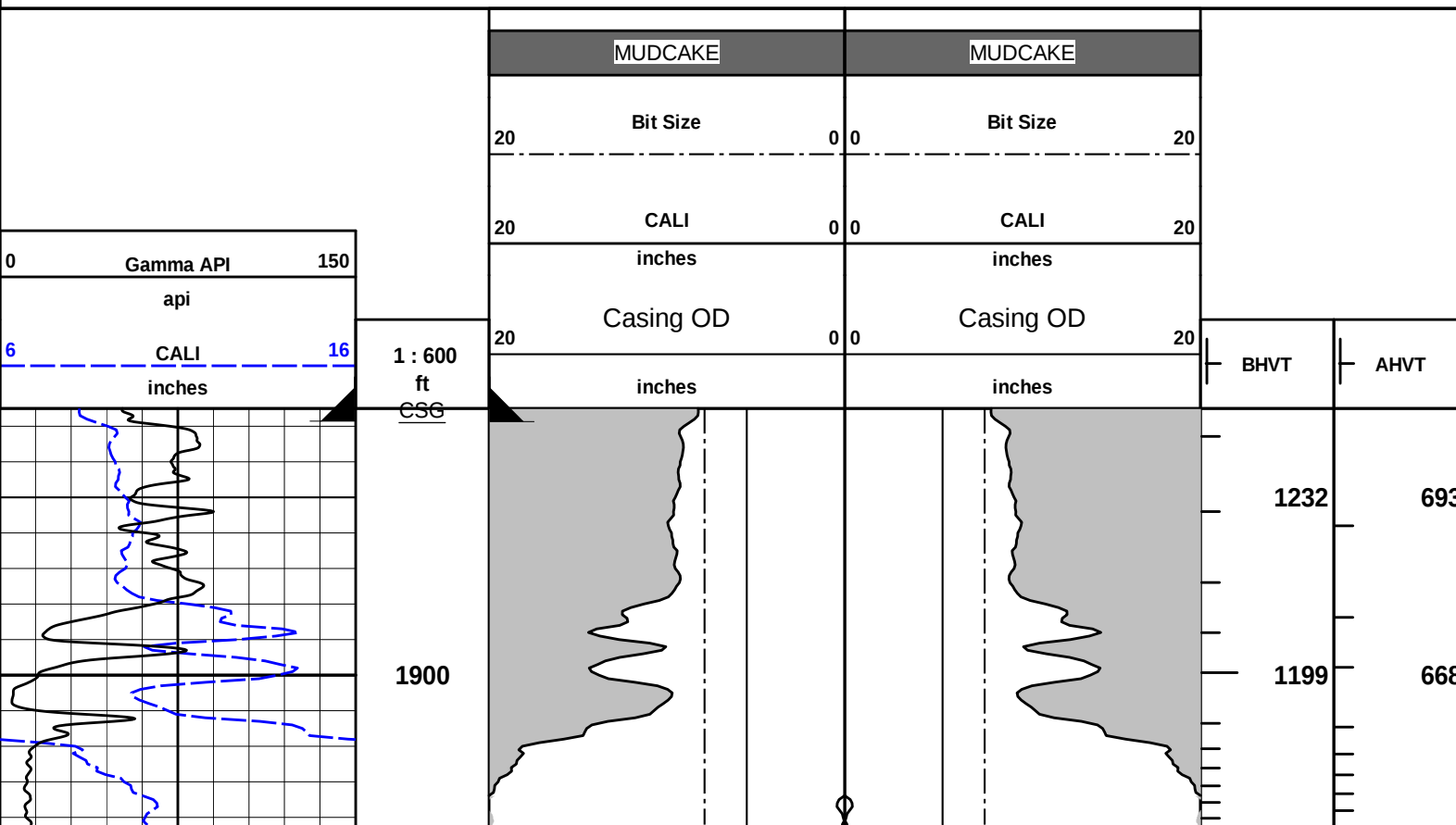
COMPANY	OXY USA INC
WELL	HYLBOM B-2
FIELD	GARDEN CITY
COUNTY	KEARNY
STATE	OKLAHOMA
API No.	15-093-21877
Location	950' FNL & 430' FEL
Other Services:	SDL DSN MICROLOG BSAT ACRT

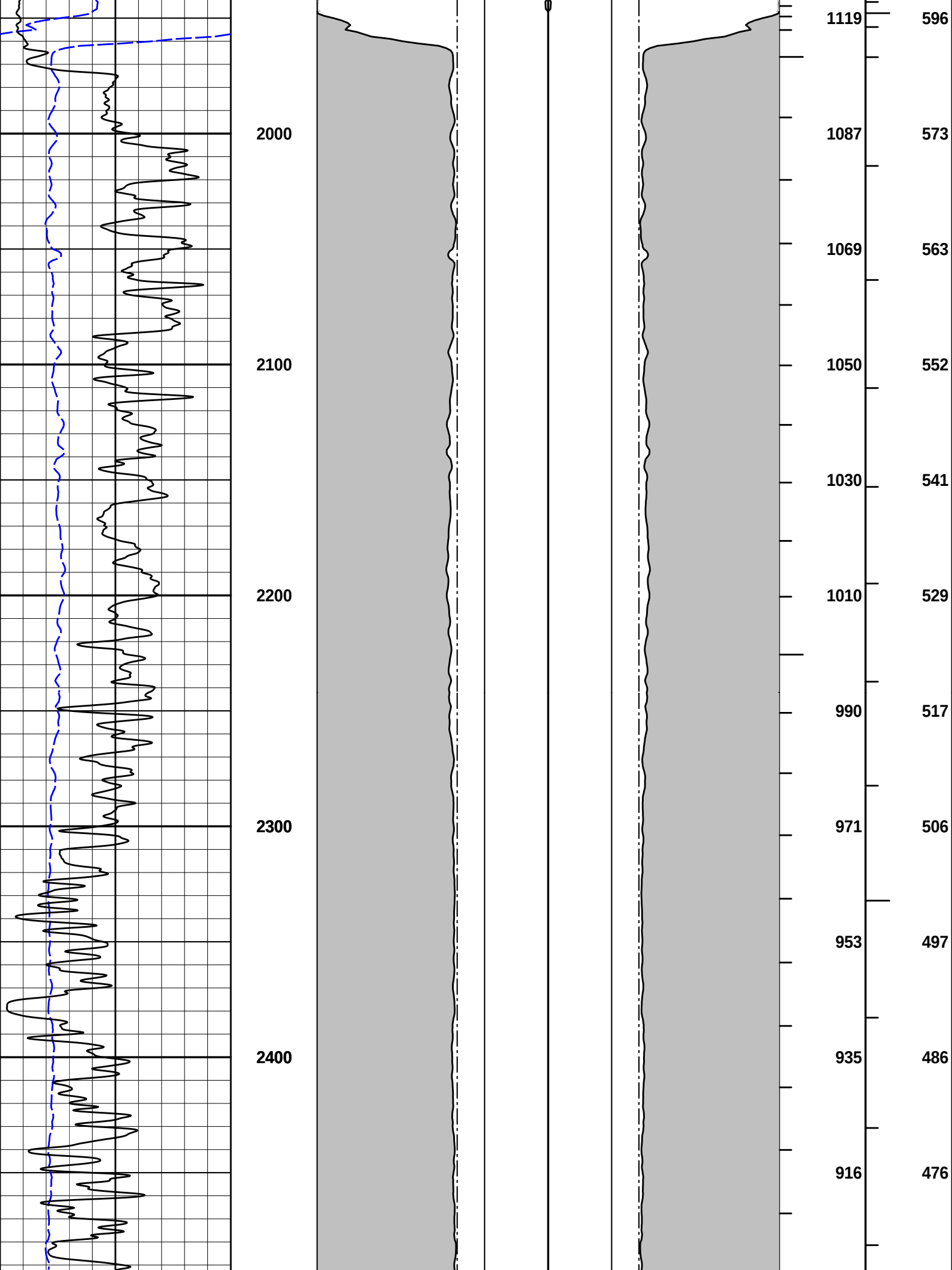
Sect.	25	Twp.	23S	Rge.	35W	Elev. 2986.0 ft	Elev. K.B. 2987.0 ft
						11.0 ft above perm. Datum	D.F. 2987.0 ft
							G.L. 2986.0 ft

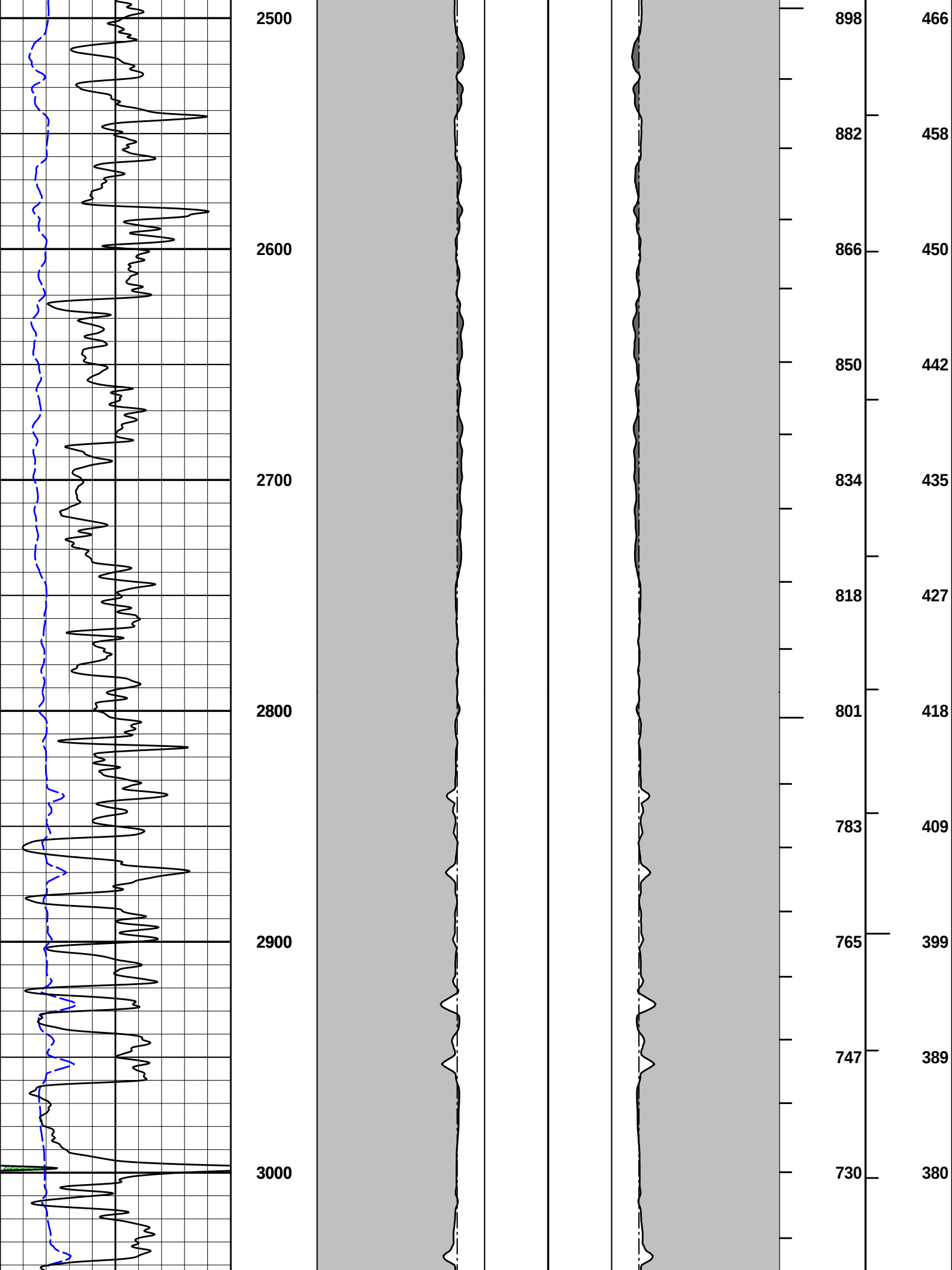
Fold here

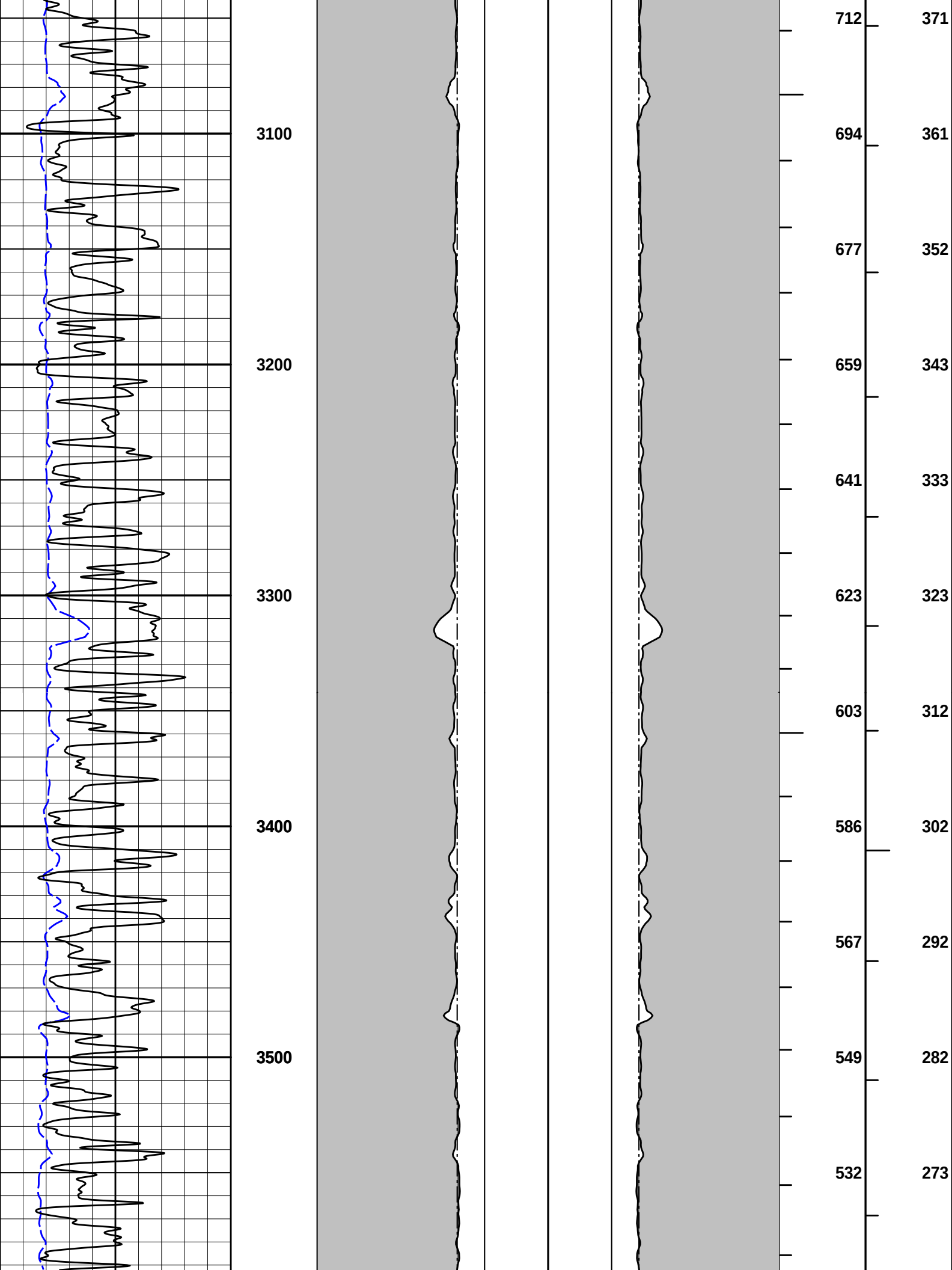
Service Ticket No.: 9502783						API Serial No.: 15-093-21877						PGM Version: WL INSITE R3.4.4 (Build 2)																	
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES																	
Date		Sample No.										Type Log		Depth		Scale Up Hole		Scale Down Hole											
Depth-Driller																													
Type Fluid in Hole																													
Density		Viscosity																											
Ph		Fluid Loss																											
Source of Sample												RESISTIVITY EQUIPMENT DATA																	
Rm @ Meas. Temp				@				@				Run No.		Tool Type & No.		Pad Type		Tool Pos.		Other									
Rmf @ Meas. Temp.				@				@																					
Rmc @ Meas. Temp.				@				@																					
Source Rmf		Rmc																											
Rm @ BHT				@				@																					
Rmf @ BHT				@				@																					
Rmc @ BHT				@				@																					
EQUIPMENT DATA																													
GAMMA						ACOUSTIC						DENSITY						NEUTRON											
Run No.		ONE				Run No.						Run No.						Run No.											
Serial No.		11013113				Serial No.						Serial No.						Serial No.											
Model No.		GTET				Model No.						Model No.						Model No.											
Diameter		3.625"				No. of Cent.						Diameter						Diameter											
Detector Model No.		GTET				Spacing						Log Type						Log Type											
Type		SCINT										Source Type						Source Type											
Length		8"				LSA [Y/N]						Serial No.						Serial No.											
Distance to Source		10'				FWDA [Y/N]						Strength						Strength											
LOGGING DATA																													
GENERAL						GAMMA						ACOUSTIC						DENSITY						NEUTRON					

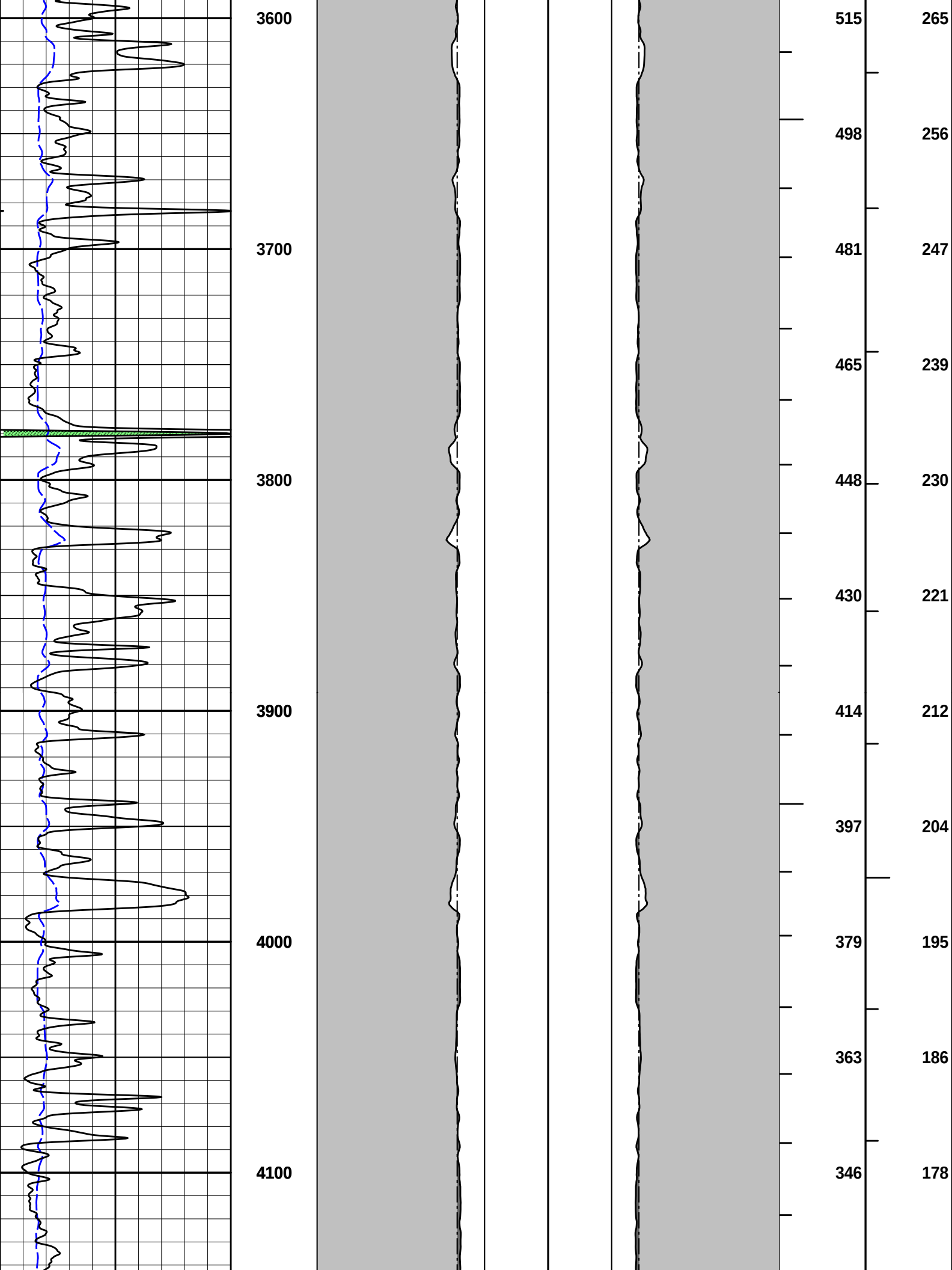
GENERAL			GAMMA		ACOUSTIC		DENSITY		NEUTRON		
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R	
ONE	5117'	1829'	REC	0	150						
DIRECTIONAL INFORMATION											
Maximum Deviation @								KOP @			
Remarks: THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES											
ANNULAR HOLE VOLUME CALCUATED USING 5.5-IN CASING											

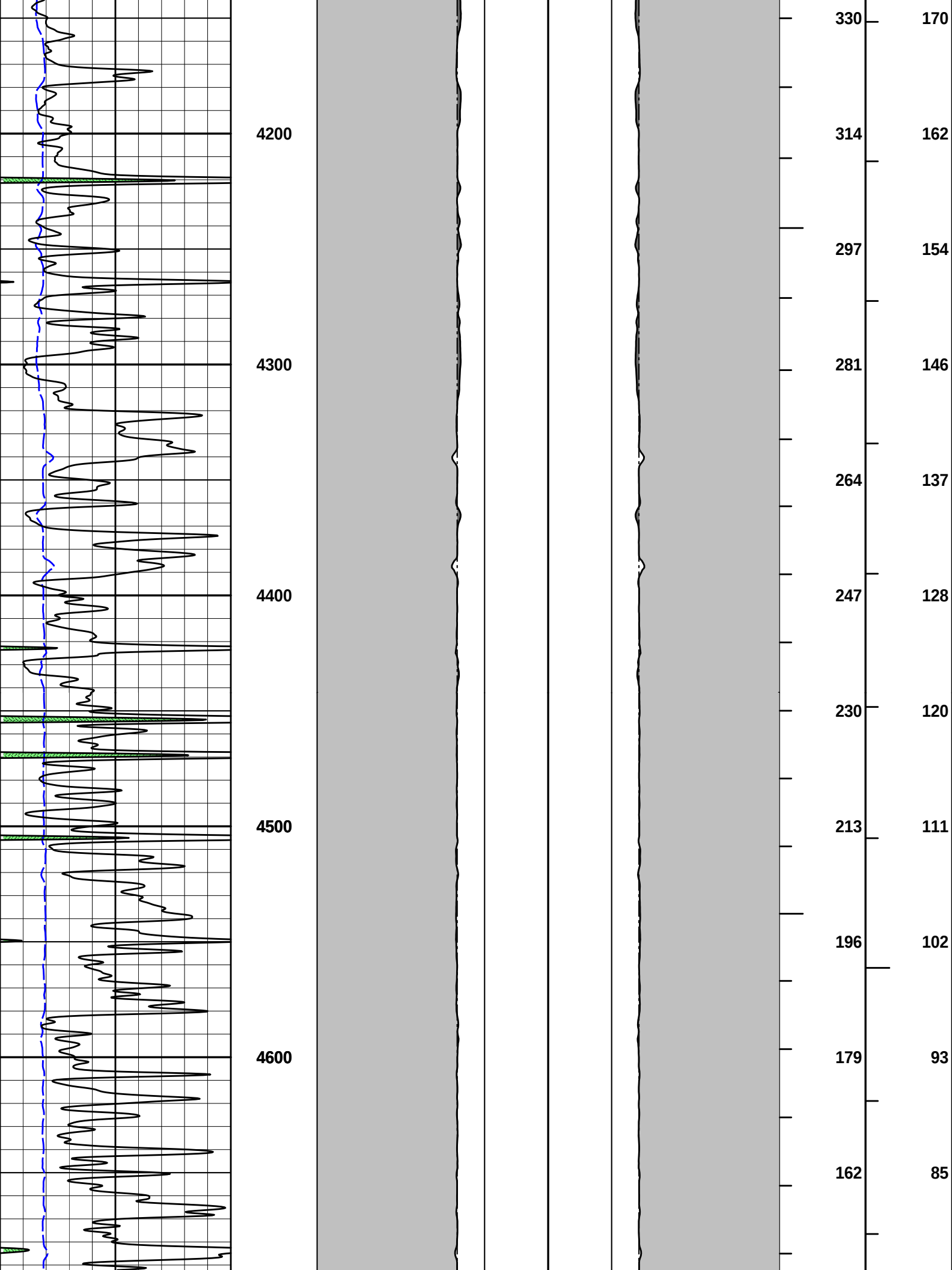


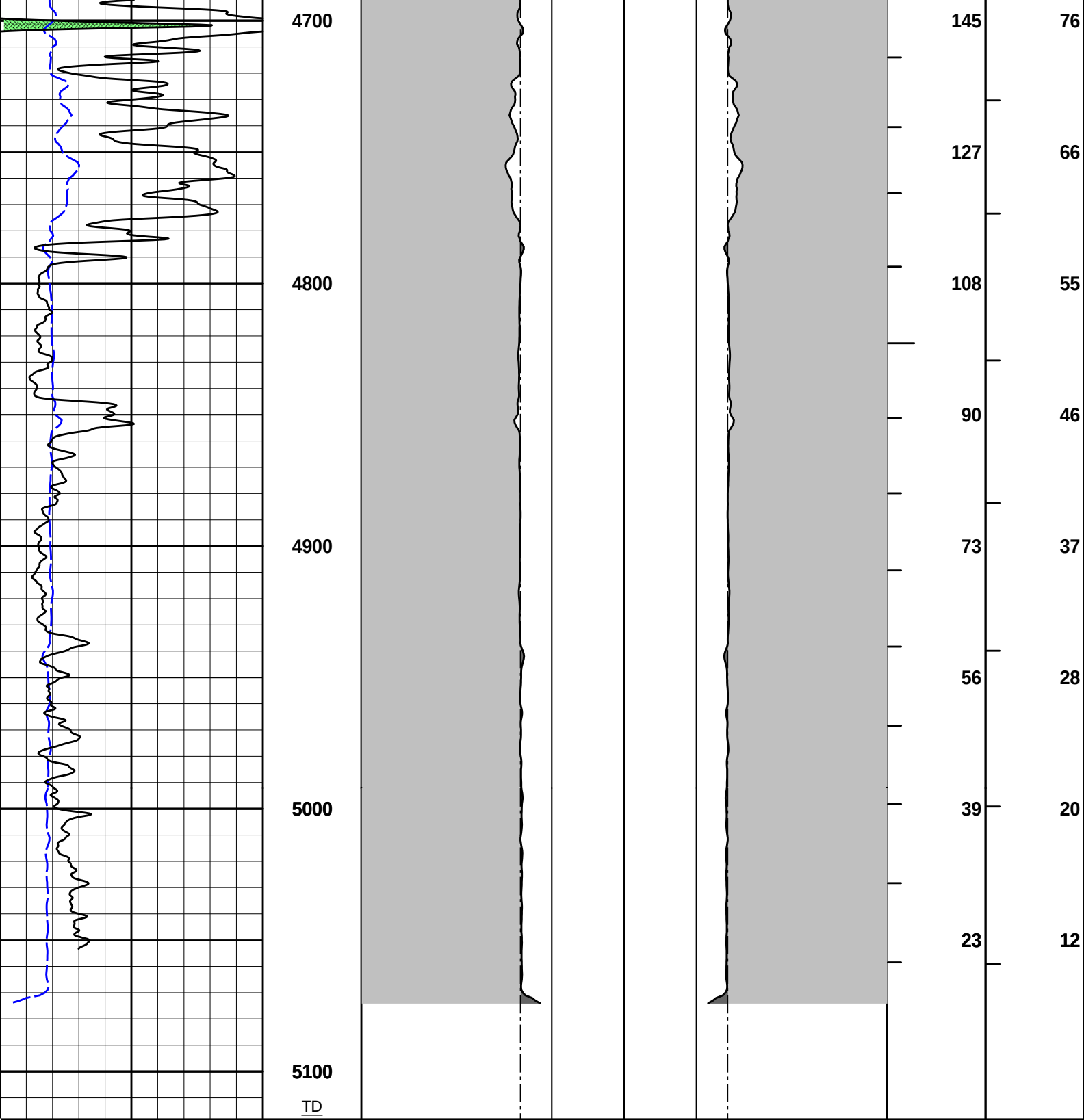












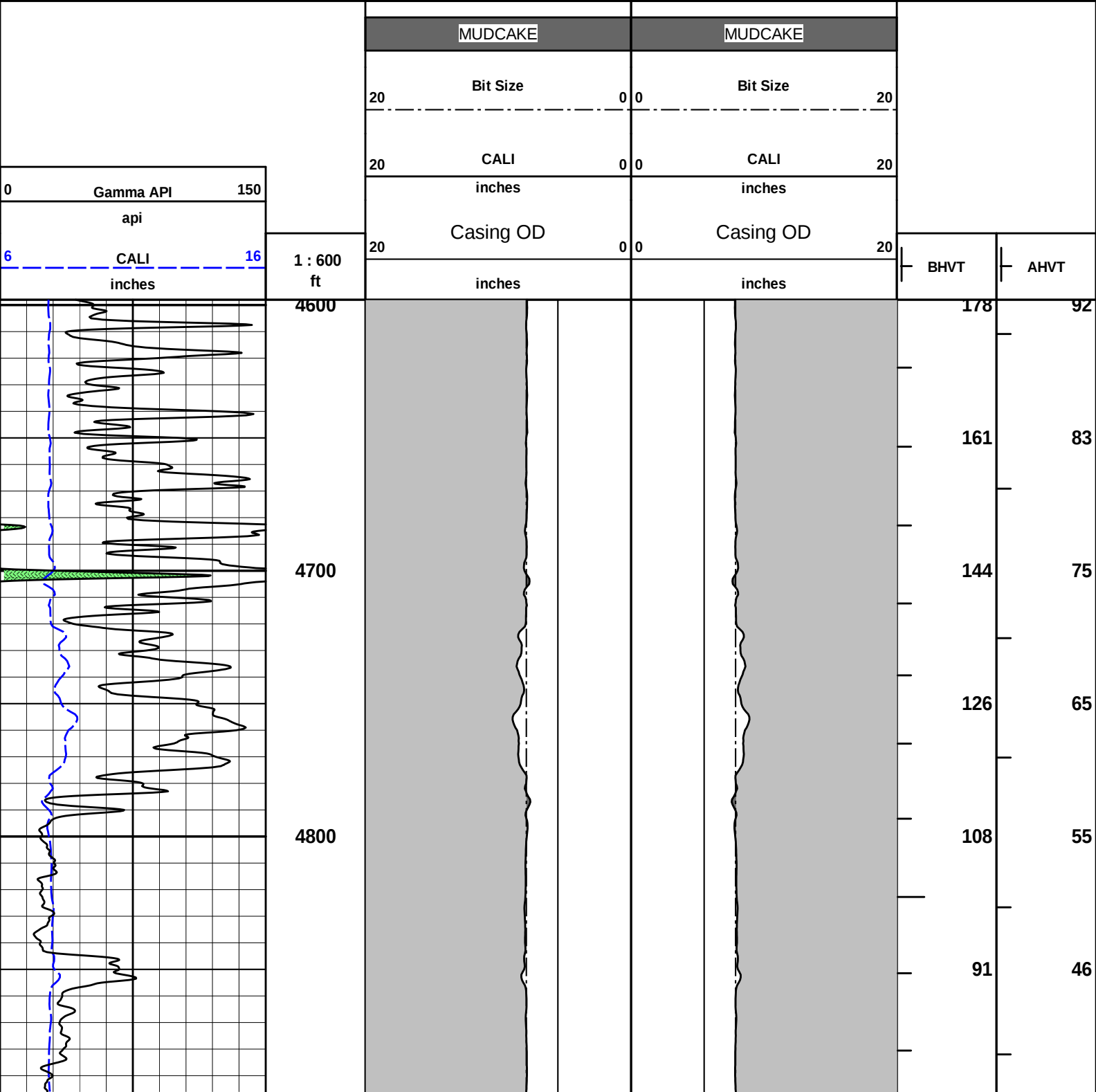
6 CALI 16 inches 0 Gamma API 150 api	1 : 600 ft	20	Casing OD	0	0	20	Casing OD	20	BHVT	AHVT
		20	inches	0	0	20	inches	20		
		20	CALI	0	0	20	CALI	20		
		20	inches	0	0	20	inches	20		
		20	Bit Size	0	0	20	Bit Size	20		
		MUDCAKE				MUDCAKE				

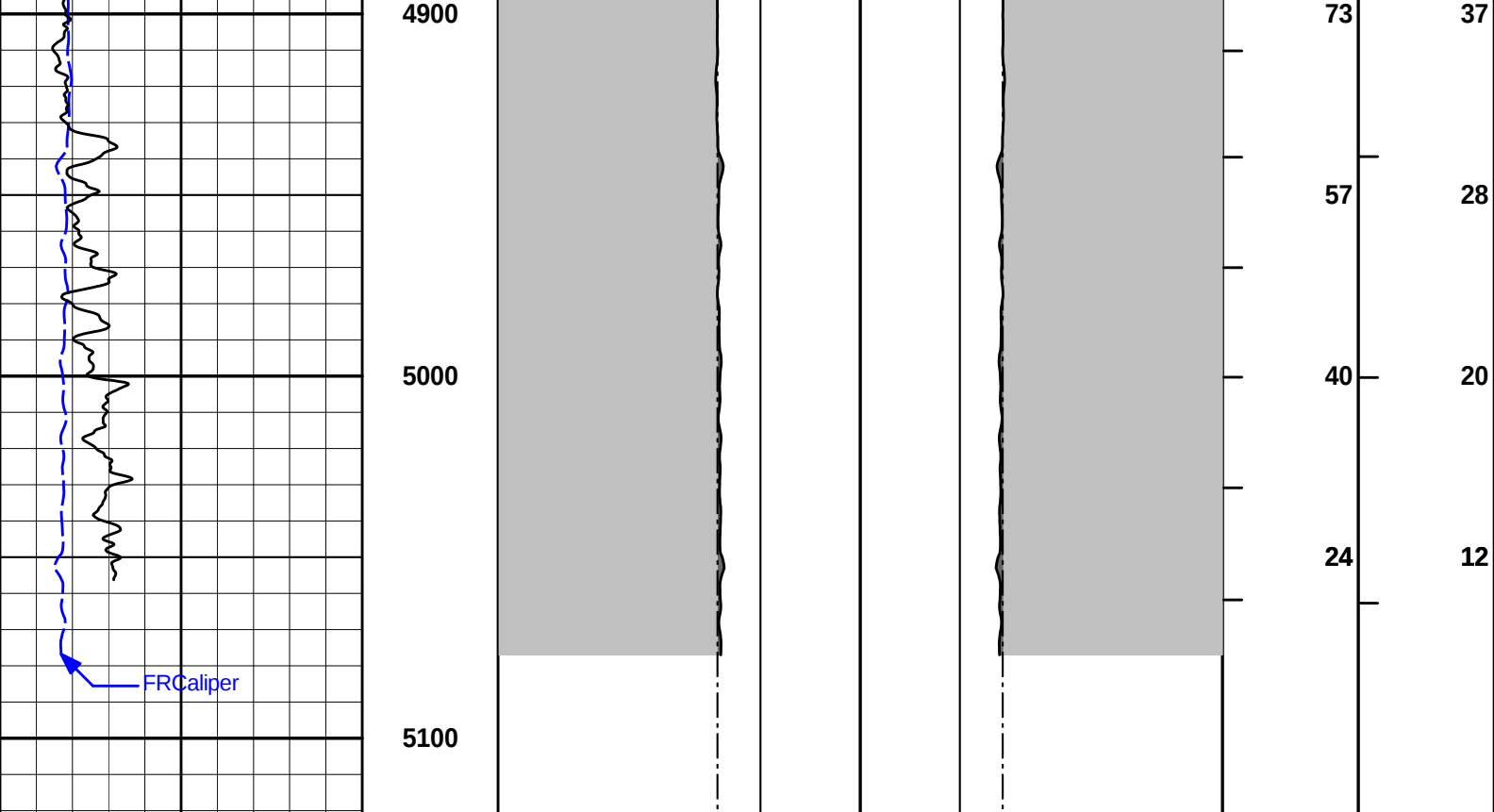
ANNULAR HOLE VOLUME PLOT

HALLIBURTON

Plot Time: 12-May-12 12:20:39
Plot Range: 4598 ft to 5121.25 ft
Data: HYLBOB_B_2\Well Based\REPEAT\
Plot File: \\-LOCAL-HYLBOM_B_2\0001 RED-QUAD\AHV1_AHV Plot_RPT

ANNULAR HOLE VOLUME PLOT





6 CALI 16 inches 0 Gamma API 150 api	1 : 600 ft	20	Casing OD	0 0	20	Casing OD	20	BHVT	AHVT
		20	inches	0 0	20	inches	20		
		20	CALI	0 0	20	CALI	20		
		20	inches	0 0	20	inches	20		
		20	Bit Size	0 0	20	Bit Size	20		
		MUDCAKE				MUDCAKE			

HALLIBURTON

Plot Time: 12-May-12 12:20:42
Plot Range: 4598 ft to 5121.25 ft
Data: HYLBOB_B_2\Well Based\REPEAT\
Plot File: \\LOCAL\HYLBOM_B_2\0001 RED-QUAD\AHV1_AHV Plot_RPT

ANNULAR HOLE VOLUME PLOT

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.300	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	ESAL	Formation Salinity NaCl	0.00	ppm

SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
SHARED	RMUD	Mud Resistivity	1.300	ohmm
SHARED	TRM	Temperature of Mud	75.0	degF
SHARED	CSD	Logging Interval is Cased?	No	
SHARED	ICOD	AHV Casing OD	5.500	in
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	5120.00	ft
SHARED	BHT	Bottom Hole Temperature	105.0	degF
SHARED	SVTM	Navigation and Survey Master Tool	NONE	
SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
SHARED	TEMM	Temperature Master Tool	NONE	
SHARED	BHSM	Borehole Size Master Tool	NONE	
Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DSNO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	Limestone 47.5	
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in

ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
BOTTOM				
Data: HYLBOB_B_2\0001 RED-QUAD\IDLE			Date: 12-May-12 09:23:21	

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 11013113	Reference Calibration Date:	17-Nov-11 17:56:53
Engineer:	RAMIRO GONZALEZ	Calibration Date:	27-Apr-12 07:01:57
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1
Calibrator Source S/N: TB 150			
Calibrator API Reference:225.00 api			
Equivalent Calibrator API Reference:228.9 api			
Measurement	Measured	Calibrated	Units
Background	15.3	15.4	api
Background + Calibrator	242.6	244.4	api
Calibrator	227.3	228.9	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION				
Tool Name:	GTET - 11013113	Reference Calibration Date:	27-Apr-12 07:01:57	
Engineer:	CORY HANSON	Calibration Date:	11-May-12 13:17:12	
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1	
Calibrator Source S/N: TB 150				
Calibrator API Reference:225.00 api				
Equivalent Calibrator API Reference:228.9 api				
Field Verification		Shop	Field	Units
Background		15.4	35.9	api
Background + Calibrator		244.4	263.6	api
Calibrator		228.9	227.7	api
Shop		Field	Difference	Tolerance
228.9		227.7	1.2	+/- 9.00

DENSITY CALIPER SHOP CALIBRATION				
Tool Name:	SDLT - I87M06P72	Reference Calibration Date:	11-May-12 13:00:52	
Engineer:	CORY HANSON	Calibration Date:	11-May-12 13:05:27	
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1	

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2253.27	-2205.36	-7000.00 - -1000.00
Pad Gain	0.0003873	0.0003844	0.000200 - 0.000600
Arm Offset	-2055.95	-1964.33	-5000.00 - 3000.00
Arm Gain	0.0005122	0.0005122	0.000200 - 0.000700

Arm Gain0.00054000.00051800.000300 - 0.000700

Arm Power-0.000006942-0.000005653-0.000010 - 0.000010

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS				
Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.76	3.75	-0.01	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.51	6.50	-0.01	+/- 0.20
Medium Ring (in)	8.31	8.25	-0.06	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed
PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed

SDLT CALIPER FIELD CALIBRATION

Tool Name:	SDLT - I87M06P72	Reference Calibration Date:	11-May-12 13:05:27
Engineer:	CORY HANSON	Calibration Date:	11-May-12 13:07:06
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.75	-0.00	+/- 0.10
Ring Diameter	8.25	8.23	-0.02	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

CALIBRATION SUMMARY

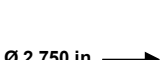
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11013113						
Gamma Ray Calibrator	228.9	227.7	-----	1.2	+/- 9.00	api
SDLT-I87M06P72						
Pad Extension	3.75	3.75	-----	0.00	+/-0.10	in
Ring Diameter	8.25	8.23	-----	0.020	+/-0.15	in

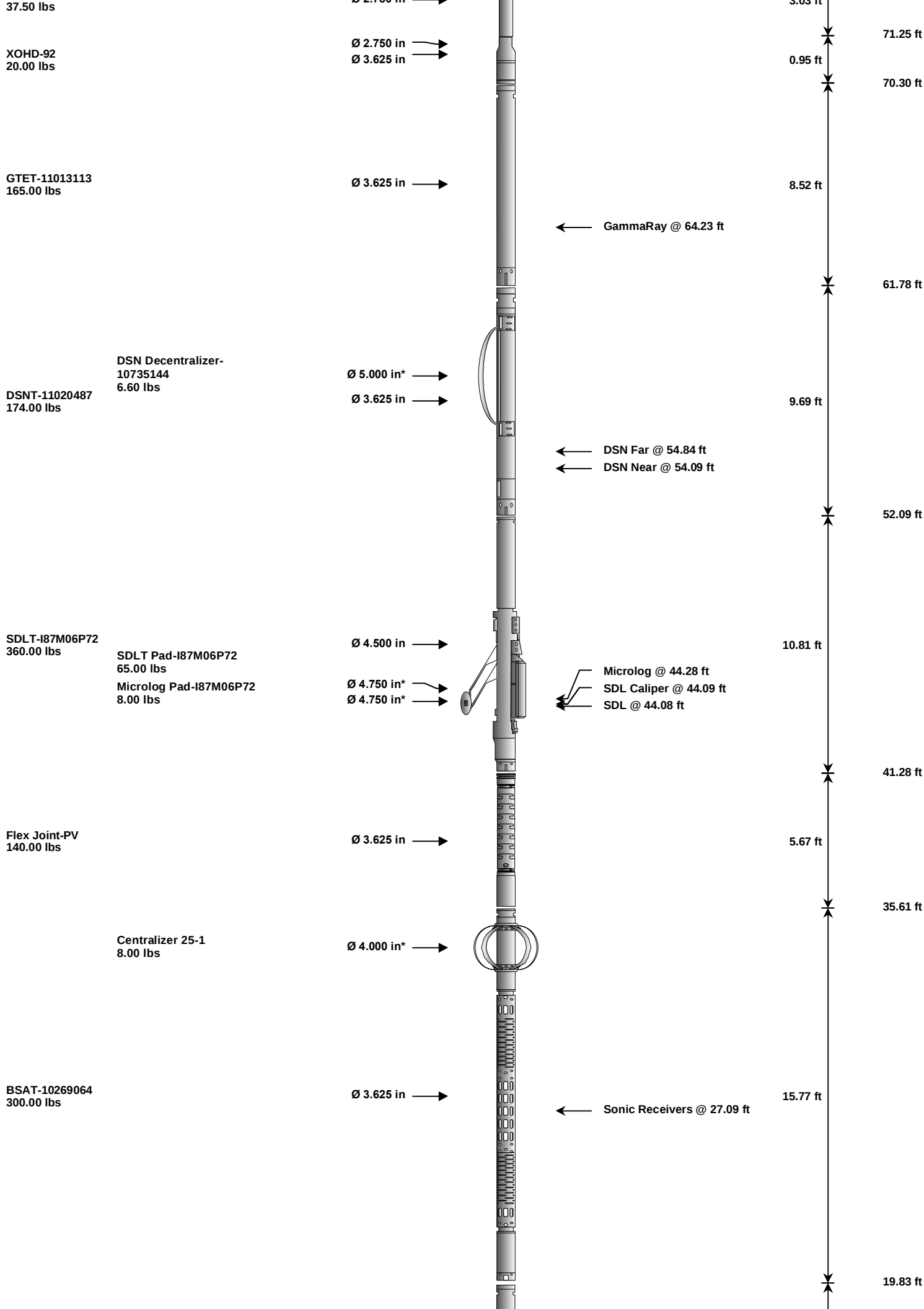
Data: HYLBOM_B_2l0001 RED-QUADl001 12-May-12 09:41 Up @1950.8f

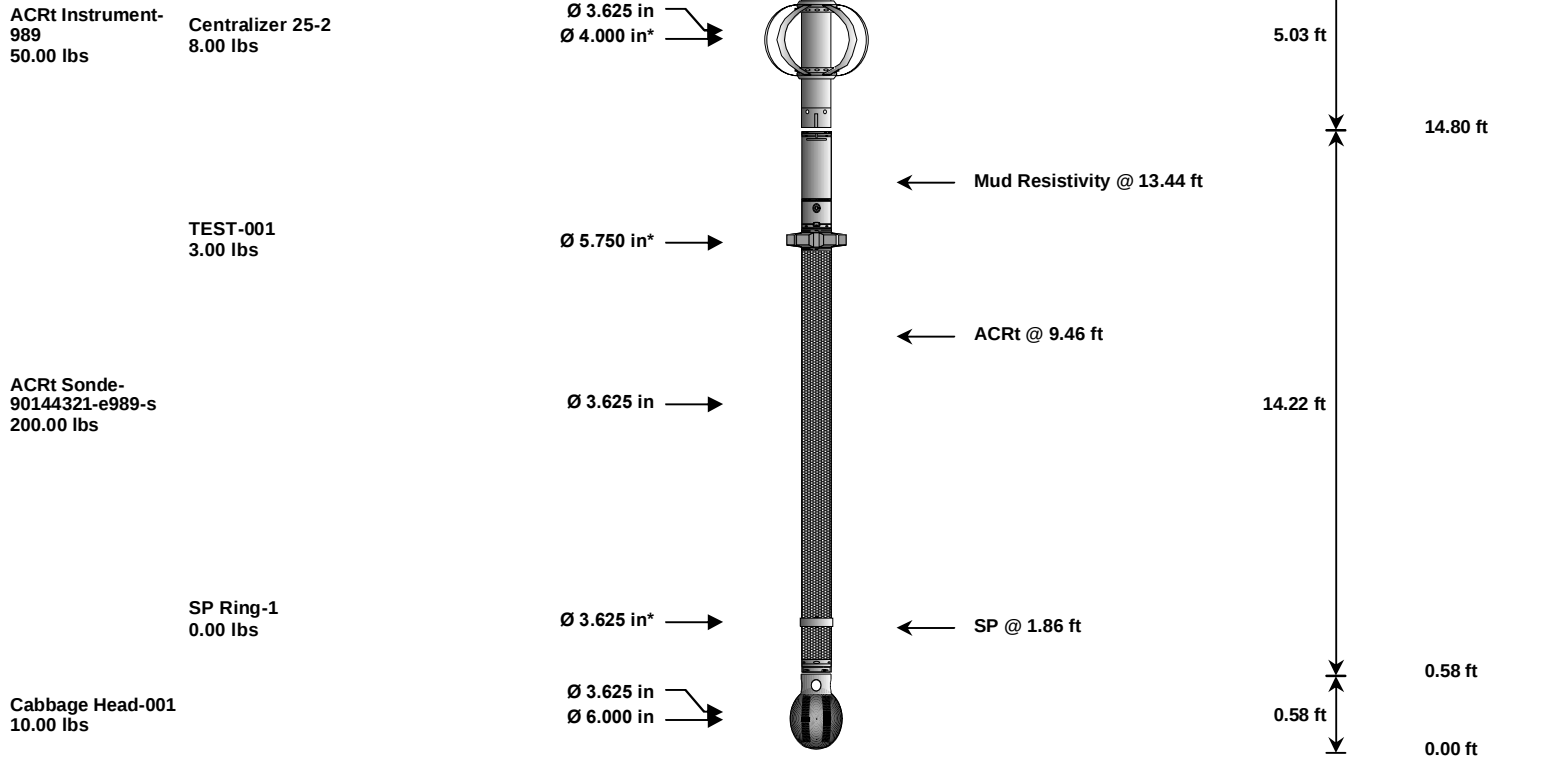
Date: 12-May-12 09:52:00

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-590_RED		Ø 2.750 in		Temperature @ 73.25 ft	74.27 ft	





Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell		590_RED	37.50	3.03	71.25	300.00
XOHD	Hostile to Dits Cross Over		92	20.00	0.95	70.30	300.00
GTET	Gamma Telemetry Tool		11013113	165.00	8.52	61.78	60.00
DSNT	Dual Spaced Neutron		11020487	174.00	9.69	52.09	60.00
DCNT	DSN Decentralizer		10735144	6.60	5.13	* 55.42	300.00
SDLT	Spectral Density Tool		I87M06P72	360.00	10.81	41.28	60.00
MICP	Microlog Pad		I87M06P72	8.00	1.00	* 43.78	60.00
SDLP	Density Insite Pad		I87M06P72	65.00	2.55	* 43.49	60.00
FLEX	Flex Joint		PV	140.00	5.67	35.61	300.00
BSAT	Borehole Sonic Array Tool		10269064	300.00	15.77	19.83	60.00
OBCEN	Centralizer - 25 in. Overbody		1	8.00	2.08	* 32.89	300.00
ACrt	Array Compensated True Resistivity Instrument Section		989	50.00	5.03	14.80	300.00
OBCEN	Centralizer - 25 in. Overbody		2	8.00	2.08	* 16.13	300.00
ACrt	Array Compensated True Resistivity		90144321-e989-s	200.00	14.22	0.58	300.00
SP	SP Ring		1	0.00	0.25	* 1.86	300.00
SO	STANDOFF		001	3.00	0.59	* 11.58	100.00
CBHD	Cabbage Head		001	10.00	0.58	0.00	300.00

Total		1,555.10	74.27	* Not included in Total Length and Length Accumulation.
Data: HYLBOM_B_2\0001 RED-QUAD\IDLE		Date: 12-May-12 09:12:53		

COMPANY	OXY USA INC		
WELL	HYLBOM B-2		
FIELD	GARDEN CITY		
COUNTY	KEARNY	STATE	OKLAHOMA
HALLIBURTON		ANNULAR HOLE VOLUME LOG	