

HALLIBURTON

WAVESONIC

FIELD COPY

KINDER MORGAN CO2 Co. L.P.
COW CANYON CS #1
MCELMO DOME
MONTEZUMA
CO

COMPANY: KINDER MORGAN CO2 Co. L.P.
 WELL: COW CANYON CS #1
 FIELD/BLOCK: MCELMO DOME
 COUNTY: MONTEZUMA
 STATE: CO

API No. 05-083-06709-0000
 Location SURFACE HOLE LOCATION:
 1360' FNL & 210' FWL
 LATTITUDE: 37.52617
 LONGITUDE: -108.93944
 Sec. 27 Twp. 38N Rge. 19W
 Other Services:
 RWCH
 ACRT
 XRM1
 SDLT
 DLLT
 DSNT
 ACRT

Permanent Datum Log measured from KB
 Drilling measured from KB
 Elev. 6459.0 ft
 23.0 ft above perm. Datum
 Elev.: K.B. 6482.0 ft
 D.F. 6482.0 ft
 G.L. 6459.0 ft

Date	06-Mar-14	ONE	
Run No.			
Depth - Driller	8660.00 ft		
Depth - Logger	8659.0 ft		
Bottom - Logged Interval	8657.0 ft		
Top - Logged Interval	8303.0 ft		
Casing - Driller	7.000 in @ 8305.0 ft		
Casing - Logger	8303.0 ft		
Bit Size	6.000 in		
Type Fluid in Hole	WATER-BASED MUD		
Density	8.6 ppg	29.00	sg/qt
PH	8.70 pH		
Source of Sample	MUD TANK		
Rm @ Meas. Temperature	0.163 ohmm @ 62.50 degF		
Rmf @ Meas. Temperature	0.17 ohmm @ 65.20 degF		
Rmc @ Meas. Temperature	N/A @ N/A		
Source Rmf	MEASURED	MEASURED	
Rm @ BHT	0.08 ohmm @ 140.0 degF		
Time Since Circulation	8.4 hr		
Time on Bottom	06-Mar-14 12:53		
Max. Rec. Temperature	140.0 degF @ 8660.0 ft		
Equipment	11871076	GJ, CO	
Recorded By	P. DIMPFL		
Witnessed By	C. SLAUGH		

Fold here

Service Ticket No.: 901171182 API Serial No.: 05-083-06709-0000 PGM Version: WL INSITE R3.8.4 (Build 5)

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.		@	@	ONE	ACRt	N/A	ECCENT	N/A
Rmc @ Meas. Temp.		@	@		I - 11585787			
Source Rmf	Rmc				S - 11585797			
Rm @ BHT		@	@					
Rmf @ BHT		@	@					
Rmc @ BHT		@	@					

EQUIPMENT DATA							
GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11005602	Serial No.	U67T68R71L70	Serial No.	10951300	Serial No.	10993888
Model No.	GTET	Model No.	WSTT-I	Model No.	SDLT-I	Model No.	DSNT-I
Diameter	3.625"	No. of Cent.	0	Diameter	4.5"	Diameter	3.625"
Detector Model No.	GTET	Spacing	0.5'	Log Type	GAMMA-GAMMA	Log Type	NEU-THERM
Type	SCINT			Source Type	Cs137	Source Type	Am241Be
Length	8"	LSA [Y/N]	Y	Serial No.	5153GW	Serial No.	DSN-388
Distance to Source	18'	FWDA [Y/N]	Y	Strength	1.5 Ci	Strength	15 Ci

LOGGING DATA

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	8659	8303	REC	0 API	150 API	0.3	-0.1	47.5 us/ft	0.3	-0.1	2.71 g/cc	0.3	-0.1	LIME

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: RUN ONE: RWCH-GTET-CSNG--DSNT-SDLT--ACRT-BN RAN IN COMBINATION

RUN TWO: RWCH-GTET-WSTT-XRMI-BN RAN IN COMBINATION

RUN:THREE: RWCH-BRIDGE-CR-SP-BRIDGE-BS-GTET-CSNG-DLLT-MSFL-BN RAN IN COMBINATION

ANNULAR HOLE VOLUME CALCULATED USING 4.5 INCH CASING

BORHOLE RUGOSITY, TENSION PULLS, AND WASHOUTS MAY EFFECT LOG QUALITY AND REPEATABILITY

DSN DENCENTRALIZER NOT RUN DUE TO BIT SIZE

MUD PRESS WAS PERFORMED, HOWEVER, THE MUDCAKE RETRIEVED WAS NOT PLENTIFUL ENOUGH TO MEASURE ACCURATELY DUE TO LIGHTWEIGHT MUD

TENSION PULL OCCURRED AT TD. PULLED 9000LBS OFF OF BOTTOM. DATA WAS SKEWED DUE TO ACCELERATION. CUSTOMER NOTIFIED

YOU CREW TODAY: T. RAFF B. CALDWELL RIG: NABORS M13

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, GRAND JUNCTION, CO (970) 523-3600

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

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PARAMETERS REPORT

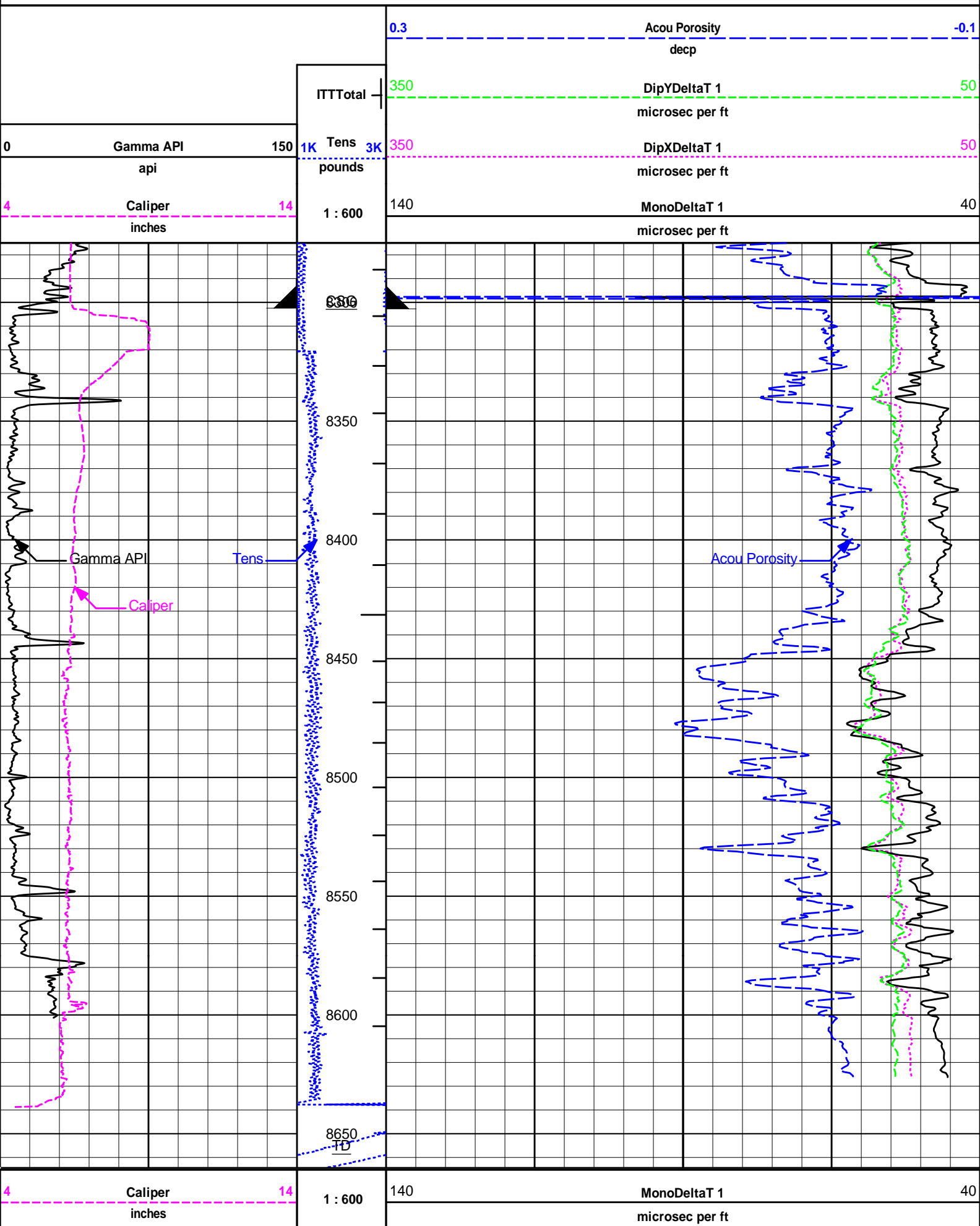
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	6.000	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	8.600	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	25000.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	0.163	ohmm
	SHARED	TRM	Temperature of Mud	62.5	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	ST	Surface Temperature	65.0	degF
	SHARED	TD	Total Well Depth	8660.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	XRMI-I Instrument	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	XRMI-I Instrument	
	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 /	AEAC	Archie A factor	0.6200	

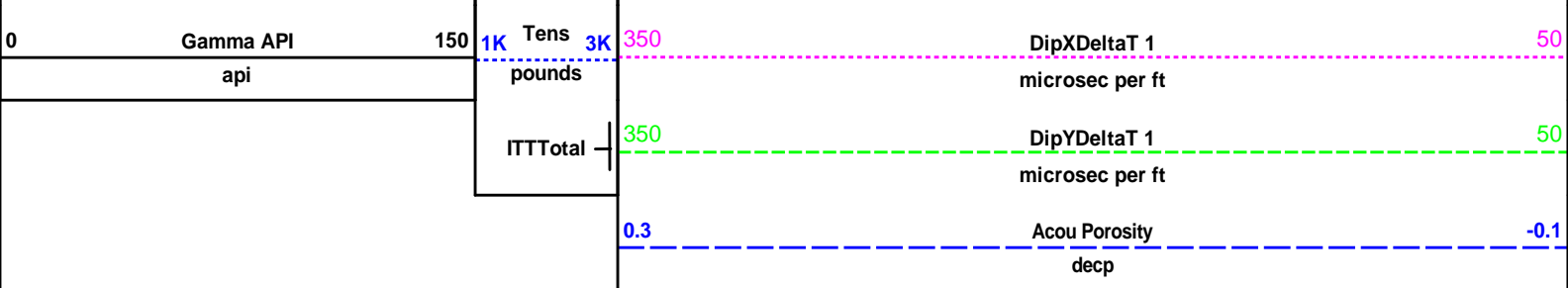
CrossPlot	AFAC	Archie A factor	0.0200	
Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.250	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
Wavesonic-I	WSOK	Process WSTT?	Yes	
Wavesonic-I	AFIL	Adaptive Filtering?	No	
Wavesonic-I	PINT	Process 1 Sample and Skip	0	
Wavesonic-I	PROM	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
Wavesonic-I	DTSH	Delta -T Shale	100.00	uspf
Wavesonic-I	DTMT	Delta -T Matrix Type	Limestone 47.5	
Wavesonic-I	DTMA	Delta -T Matrix	47.50	uspf
Wavesonic-I	DTFL	Delta -T Fluid	189.00	uspf
Wavesonic-I	RHOM	Matrix Density	2.7100	g/cc
Wavesonic-I	RHOF	Fluid Density	1.0000	g/cc
Wavesonic-I	SMTH	Semblance Threshold	0.25	
Wavesonic-I	VPVS	VPVS Ratio for Porosity	1.40	
Wavesonic-I	APEQ	Acoustic Porosity Equation	Wylie	
Wavesonic-I	NAVS	Navigation Source Tool	XRMI-I Instrument	
XRMI-I Instrument	WRTI	Survey Writing Interval	30	ft
XRMI-I Instrument	SOPT	Smoothing Option	None	
XRMI-I Mandrel	DIMG	Process XRMI?	Yes	
XRMI-I Mandrel	ROTI	Rotate Image (N-E-S-W-N)?	No	
XRMI-I Mandrel	AGN	Use Button Auto Gain?	Yes	
XRMI-I Mandrel	BCLR	Button Auto Gain Color	127	
XRMI-I Mandrel	BFIL	Button Auto Gain Filter	0.020	
XRMI-I Mandrel	BGAN	Button Gain Value	0.001	
XRMI-I Mandrel	BOFF	Button Offset	0	
XRMI-I Mandrel	DIPE	Process Dipmeter Calculations?	Yes	
XRMI-I Mandrel	BHCS	Process Borehole Corrections?	Yes	
XRMI-I Mandrel	CLOK	Process Caliper Outputs?	Yes	
XRMI-I Mandrel	CMAX	Caliper Maximum Limit	100.0	in
XRMI-I Mandrel	CMIN	Caliper Mimimum Limit	3.5	in

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Plot Time: 06-Mar-14 20:24:30
 Plot Range: 8275 ft to 8664.42 ft
 Data: KIND_MOR_CS_1\Well Based\1
 Plot File: \\WSTT\WST-I ACOU PORO_2"

MAIN PASS, 2" = 100'





HALLIBURTON

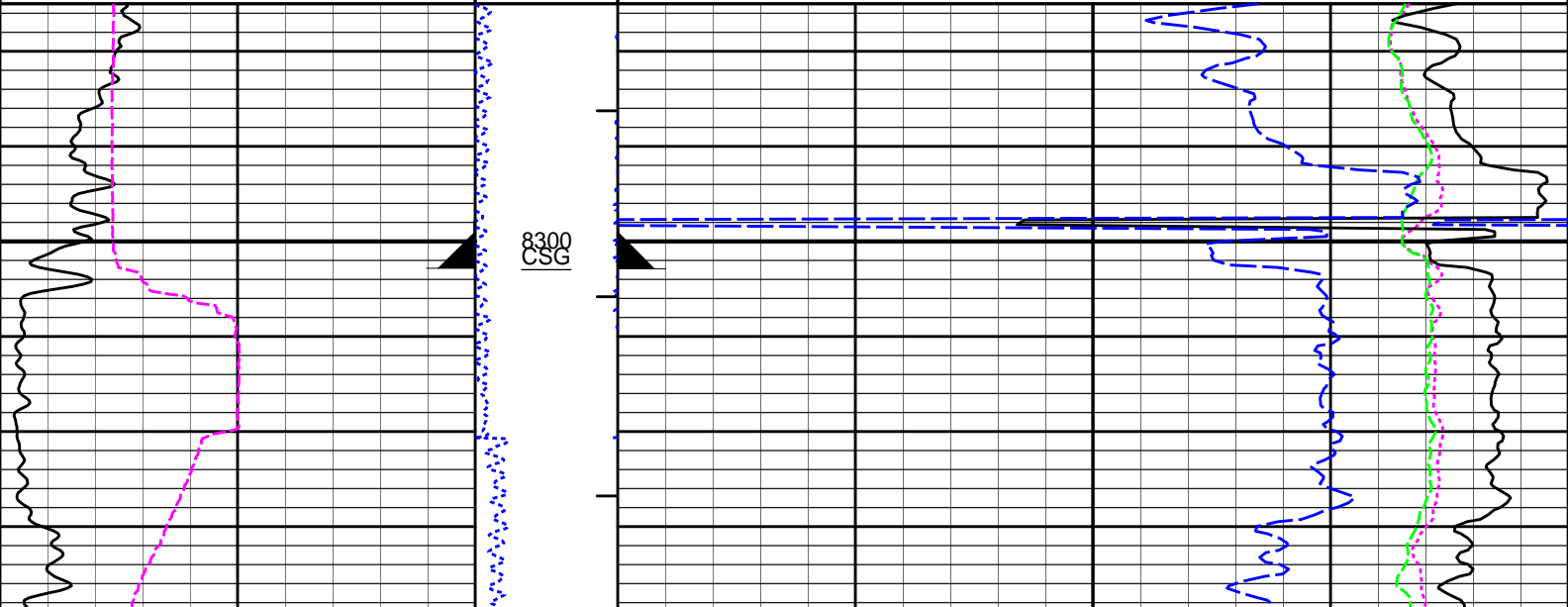
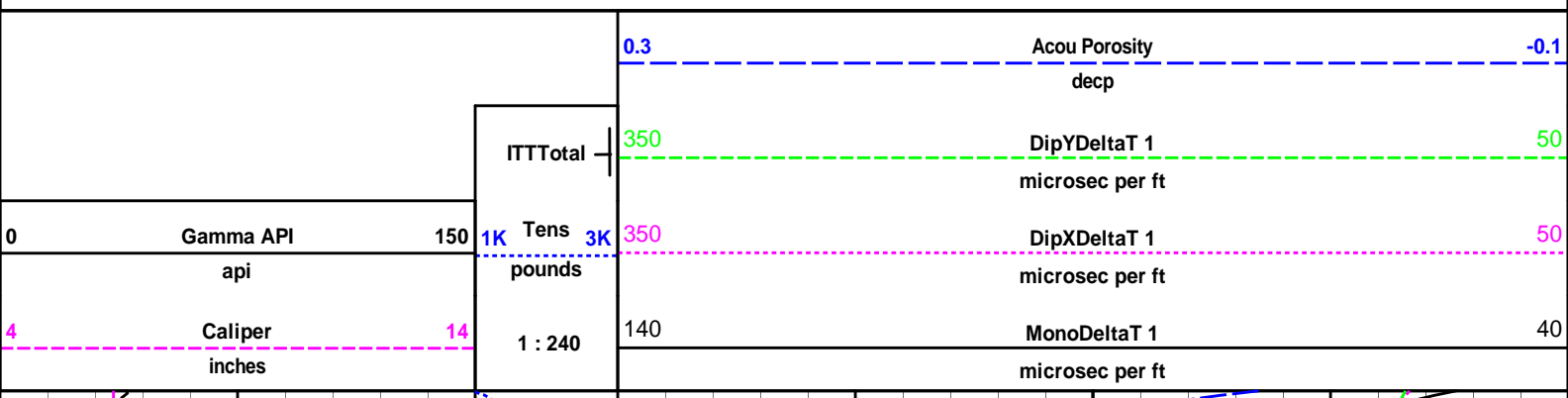
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 Plot Range: 8275 ft to 8664.42 ft
 Data: KIND_MOR_CS_1\Well Based*\
 Plot File: \\WSTT\WST-I ACOU PORO_2"

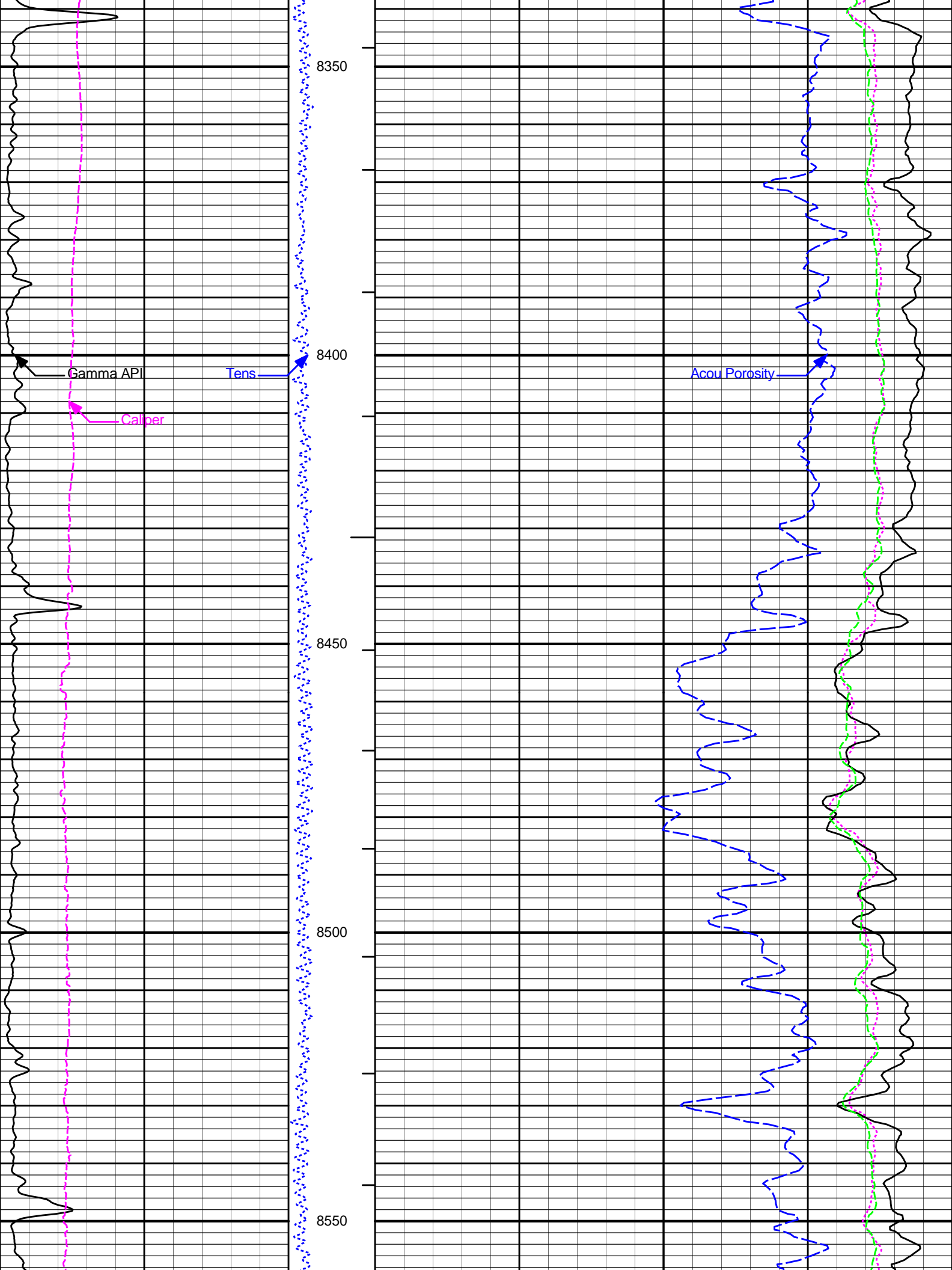
MAIN PASS, 2" = 100'

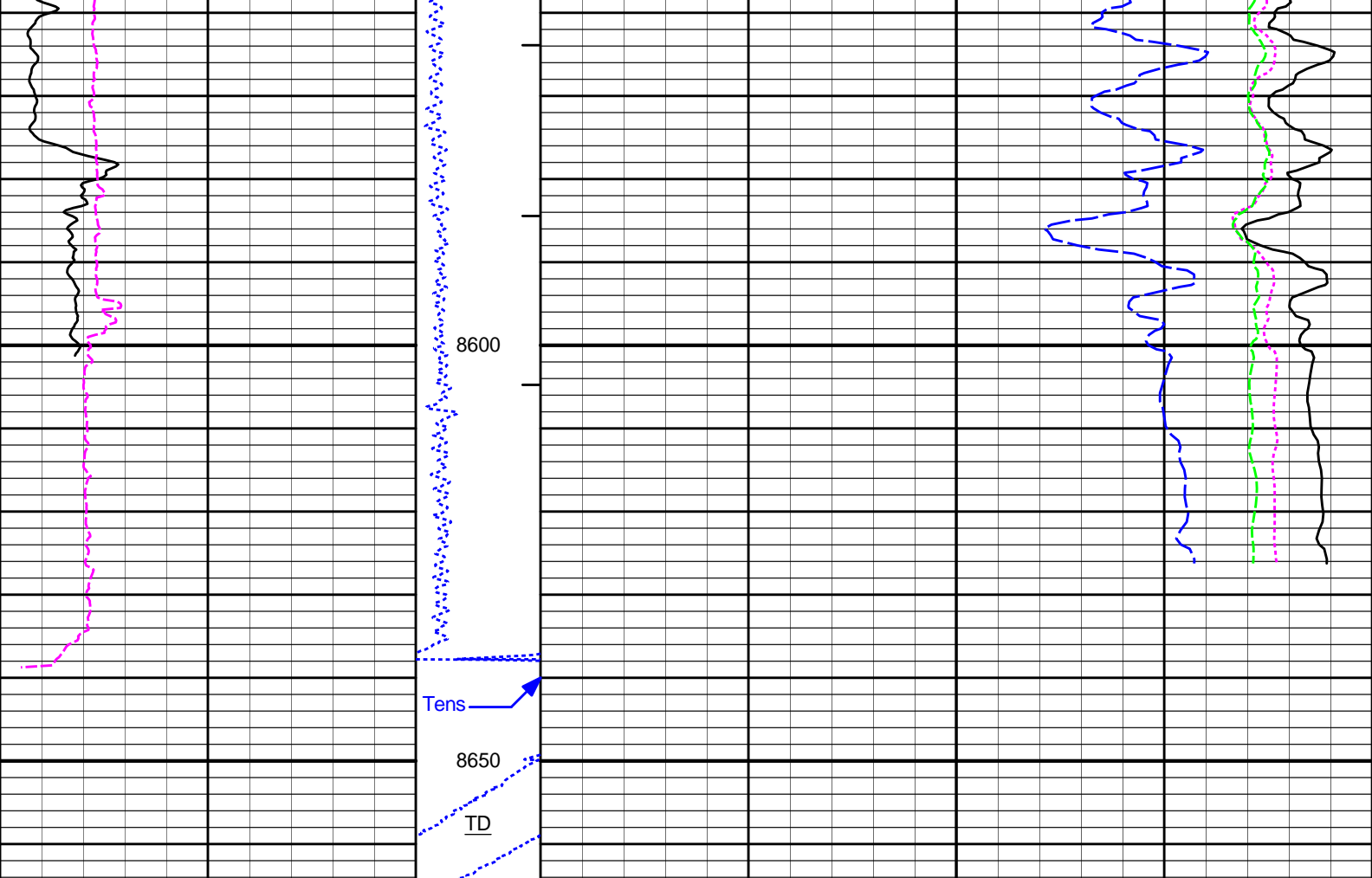
HALLIBURTON

Plot Time: 06-Mar-14 20:24:32
 Plot Range: 8275 ft to 8664.42 ft
 Data: KIND_MOR_CS_1\Well Based*\
 Plot File: \\WSTT\WST-I ACOU PORO

MAIN PASS, 5" = 100'







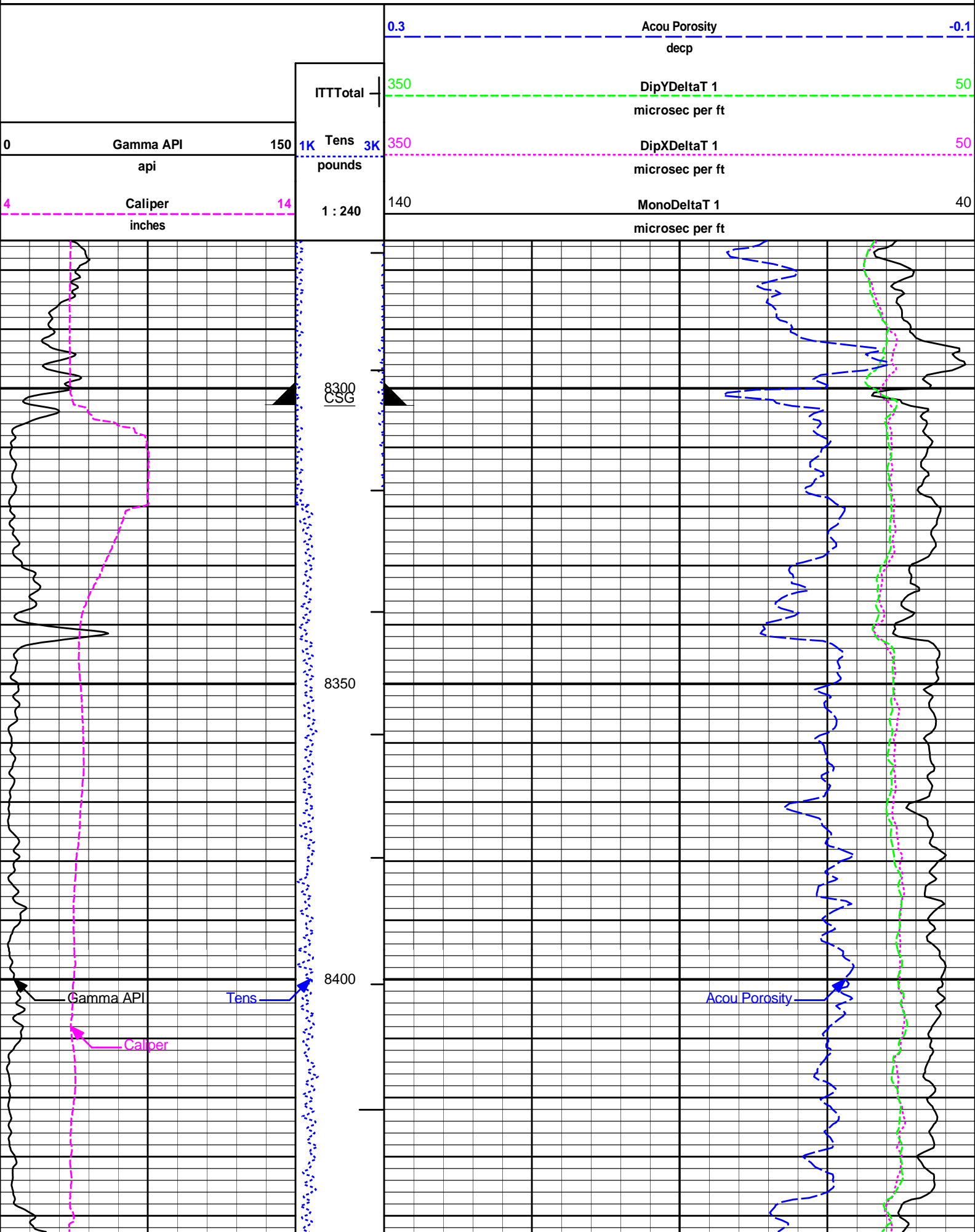
4	Caliper inches	14	1 : 240	140	MonoDeltaT 1 microsec per ft	40
0	Gamma API api	150	1K Tens 3K pounds	350	DipXDeltaT 1 microsec per ft	50
			ITTTotals	350	DipYDeltaT 1 microsec per ft	50
				0.3	Acou Porosity decip	-0.1

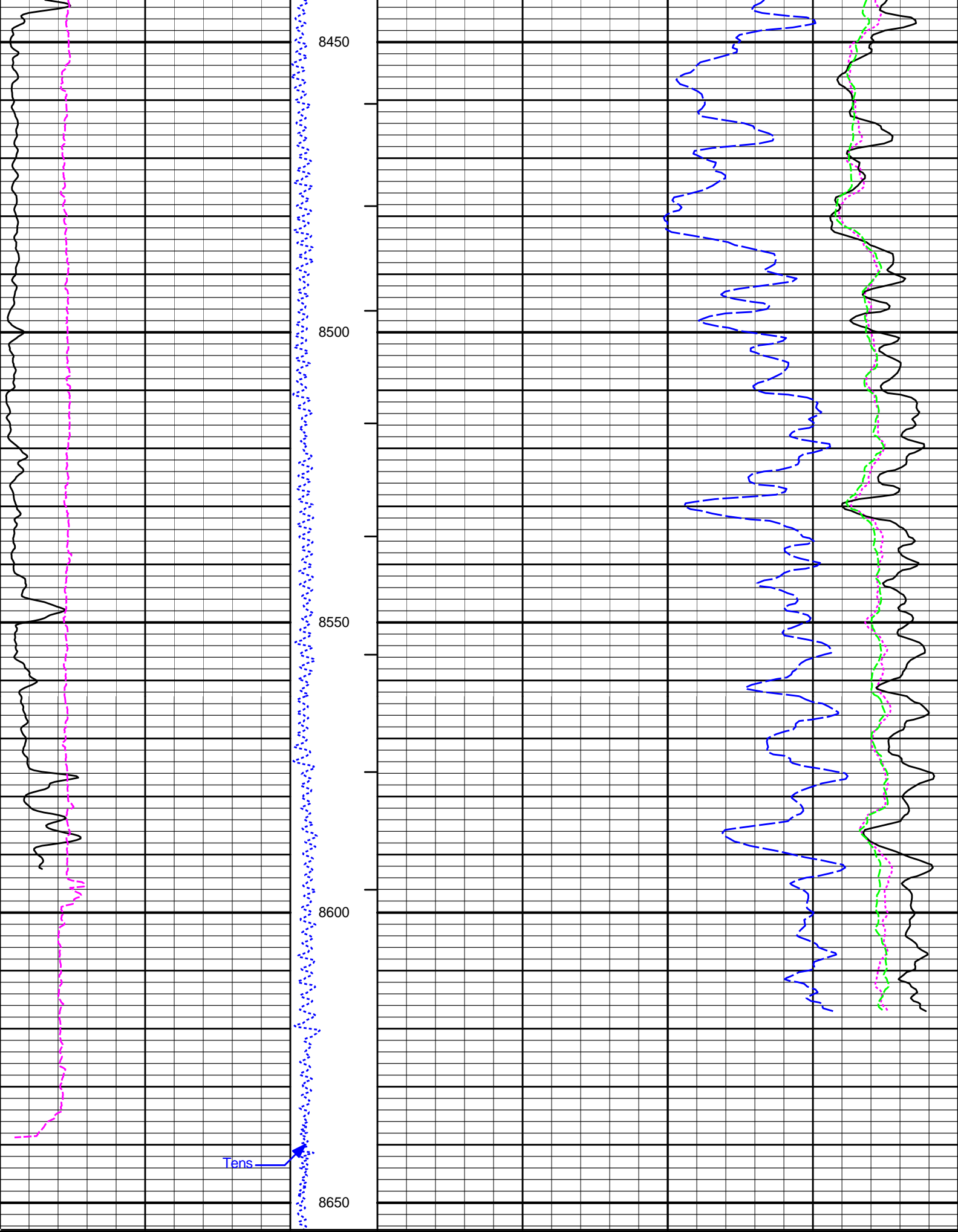
HALLIBURTON Plot Time: 06-Mar-14 20:24:33
 Plot Range: 8275 ft to 8664.42 ft
 Data: KIND_MOR_CS_1\Well Based\1
 Plot File: \\WSTT\WST-I ACOU PORO

MAIN PASS, 5" = 100'

HALLIBURTON Plot Time: 06-Mar-14 20:24:33
 Plot Range: 8275 ft to 8654.67 ft
 Data: KIND_MOR_CS_1\Well Based\1
 Plot File: \\WSTT\WST-I ACOU PORO

REPEAT PASS, 5" = 100'





4 Caliper inches 14

1 : 240

140

MonoDeltaT 1 40
microsec per ft

0	Gamma API	150	1K Tens	3K	350	DipXDeltaT 1	50
	api		pounds			microsec per ft	
			ITTTot		350	DipYDeltaT 1	50
						microsec per ft	
					0.3	Acou Porosity	-0.1
						decp	

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Plot Time: 06-Mar-14 20:24:35
 Plot Range: 8275 ft to 8654.67 ft
 Data: KIND_MOR_CS_1\Well Based\
 Plot File: \\WSTT\WST-I ACOU PORO

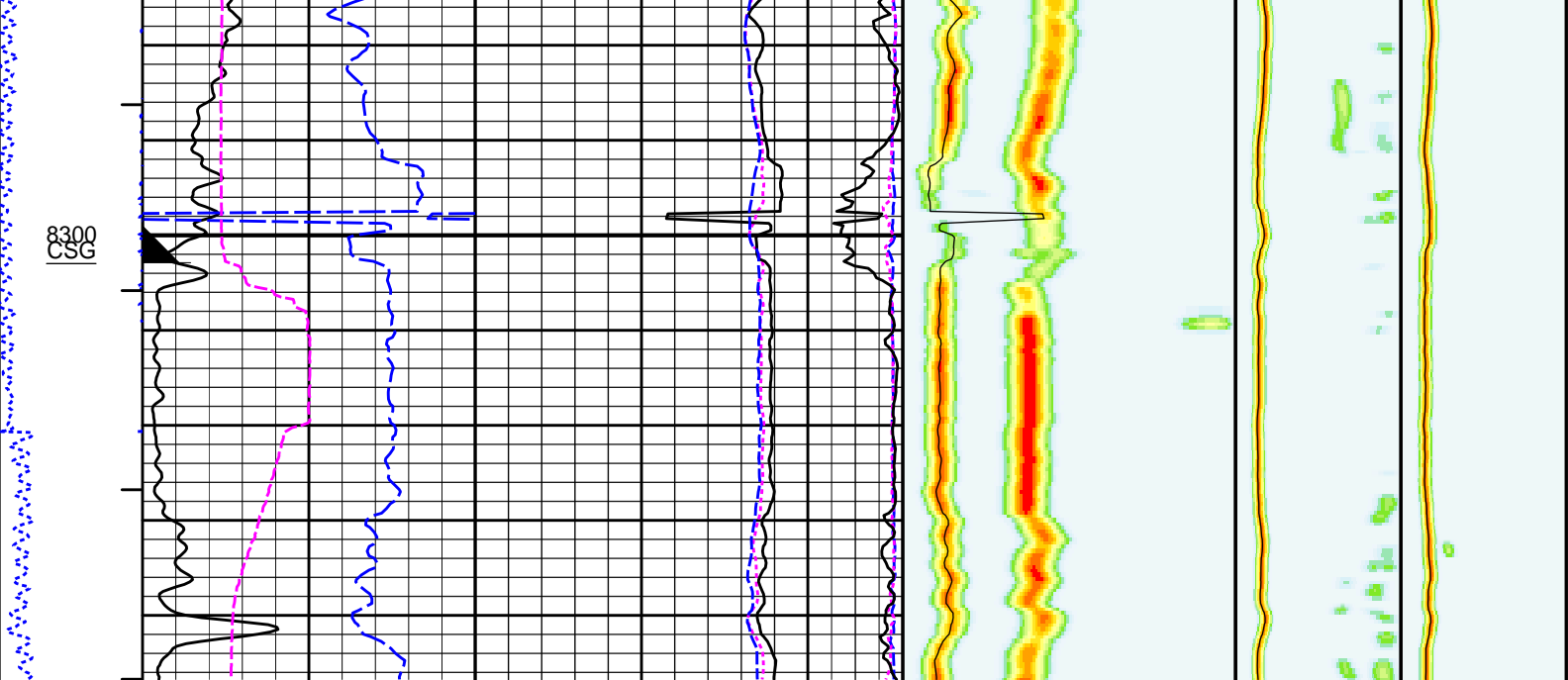
REPEAT PASS, 5" = 100'

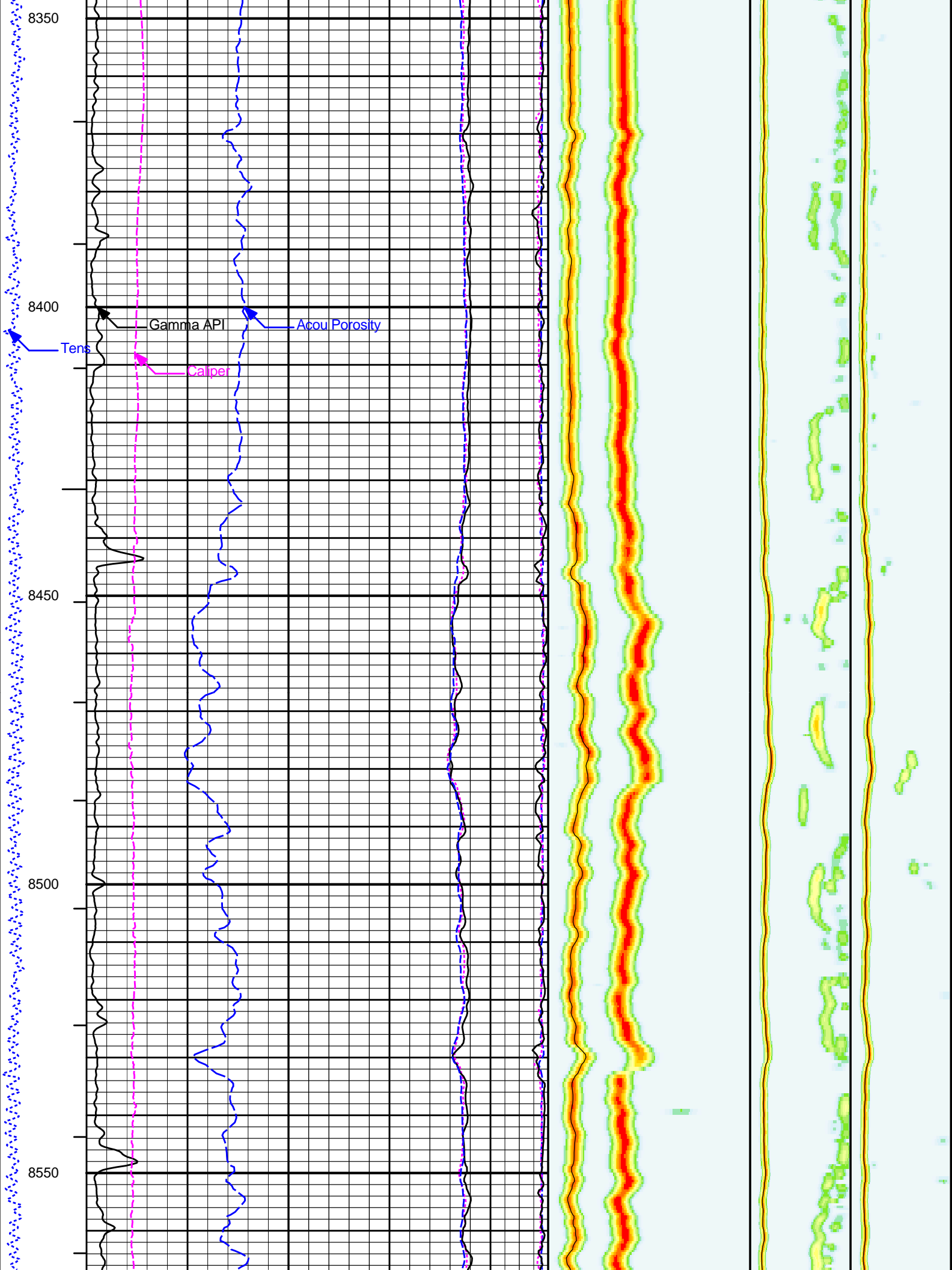
HALLIBURTON

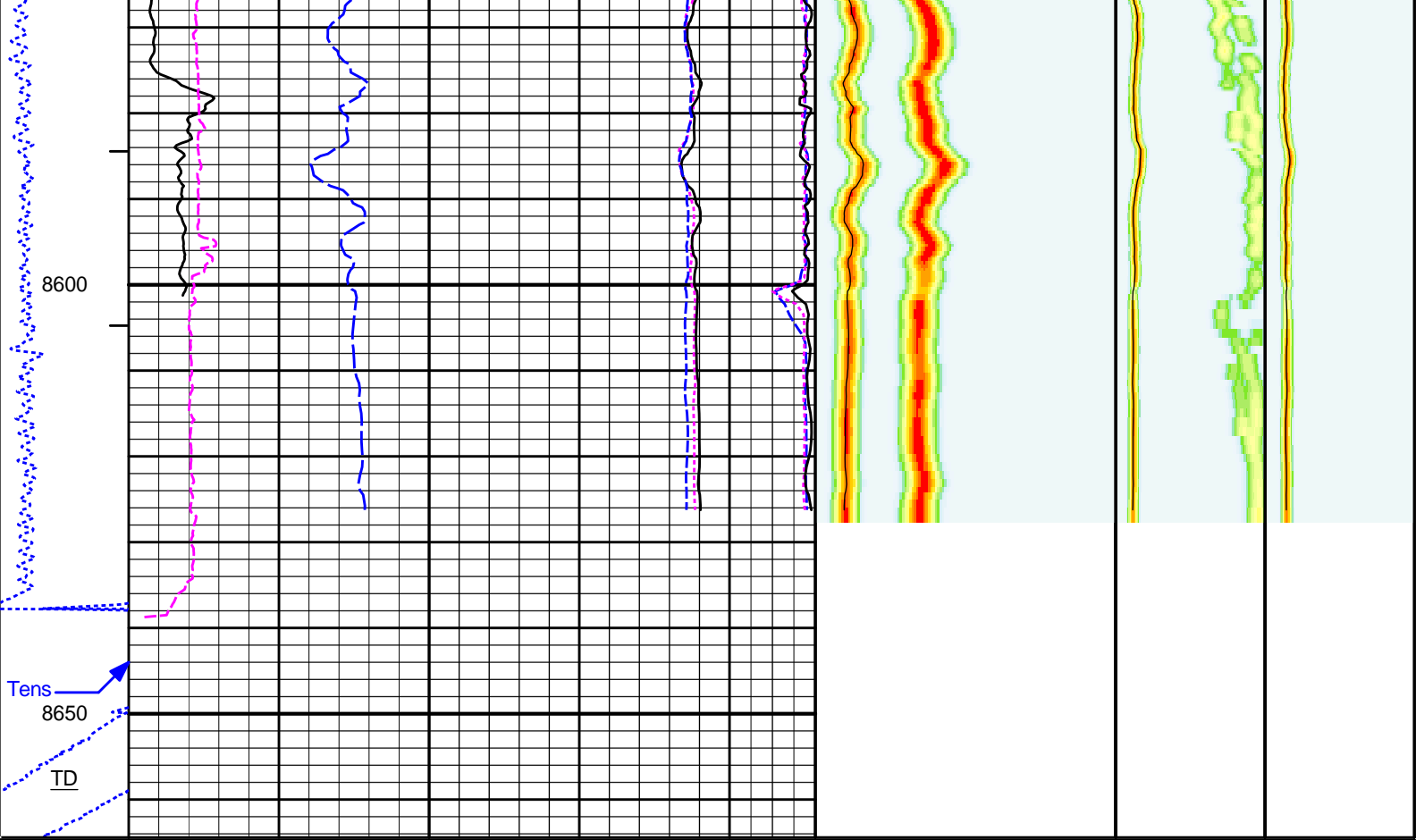
Plot Time: 06-Mar-14 20:24:35
 Plot Range: 8275 ft to 8664.42 ft
 Data: KIND_MOR_CS_1\Well Based\
 Plot File: \\WSTT\WST-I Hard 1-240

MAIN PASS, 5" = 100'

ITTTot	0	Gamma API	150	350	DipYDeltaT 1	50	0	YSBP1
		api			microsec per ft			
1K Tens	3K	4	Caliper	14	350	DipXDeltaT 1	50	0
pounds			inches			microsec per ft		XSBP1
1 : 240	0.3	Acou Porosity	-0.1	190	MonoDeltaT 1	30	0	MSBP1
		decp			microsec per ft			







1 : 240	0.3	Acou Porosity	-0.1	190	MonoDeltaT 1	30	MSBP1	30	Mono Semb Vec	190	Dip X Semb Wave	Dip Y Semb Wave
		decp			microsec per ft							
1K Tens 3K pounds	4	Caliper	14	350	DipXDeltaT 1	50	XSBP1	30	MonoDeltaT	190	50 DipXDeltaT	350 DipYDeltaT
		inches			microsec per ft				microsec per ft		microsec per ft	microsec per ft
ITTTotal	0	Gamma API	150	350	DipYDeltaT 1	50	YSBP1					
		api			microsec per ft							

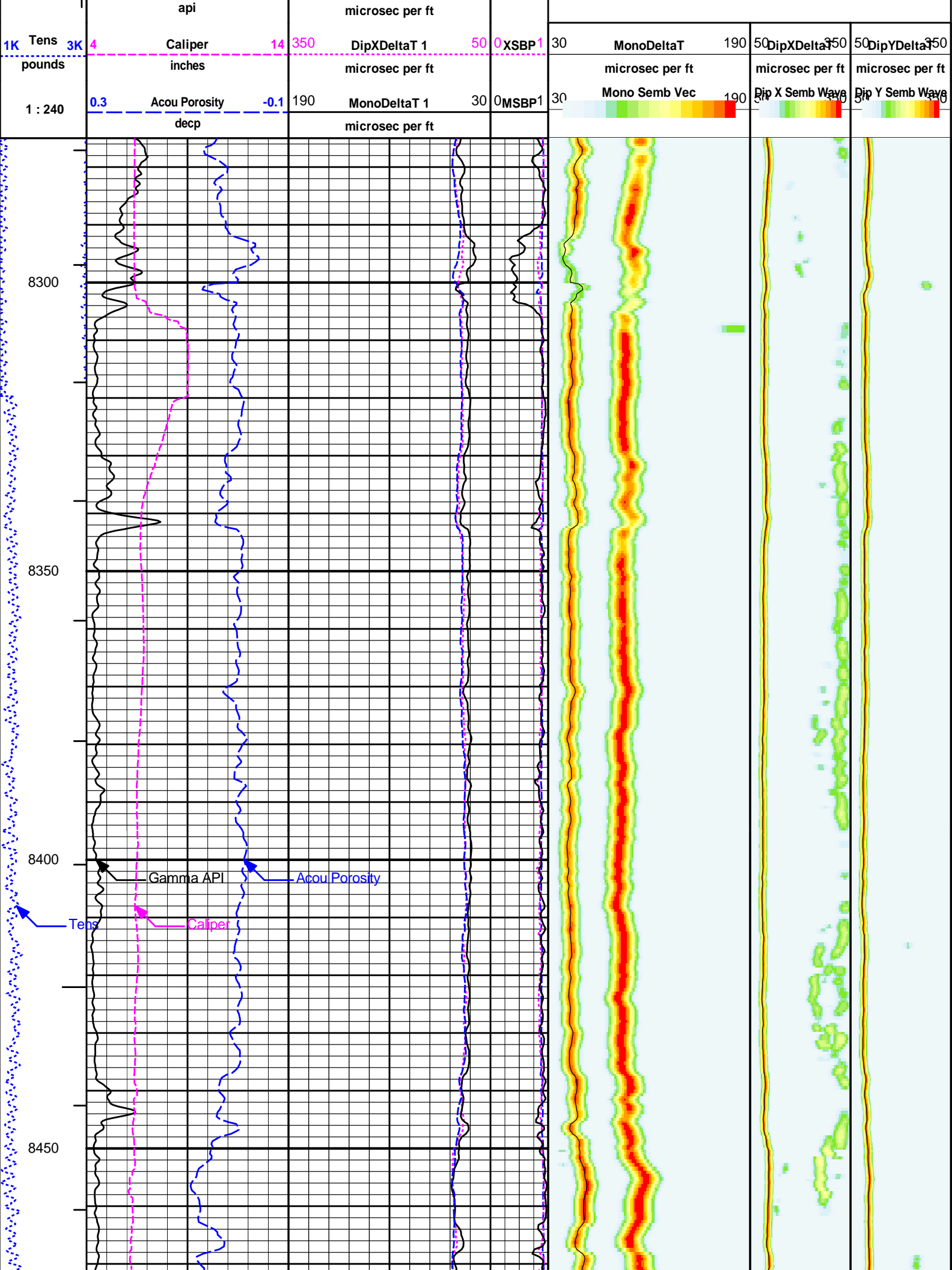
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 Plot File: \\WSTT\WST-I Hard 1-240

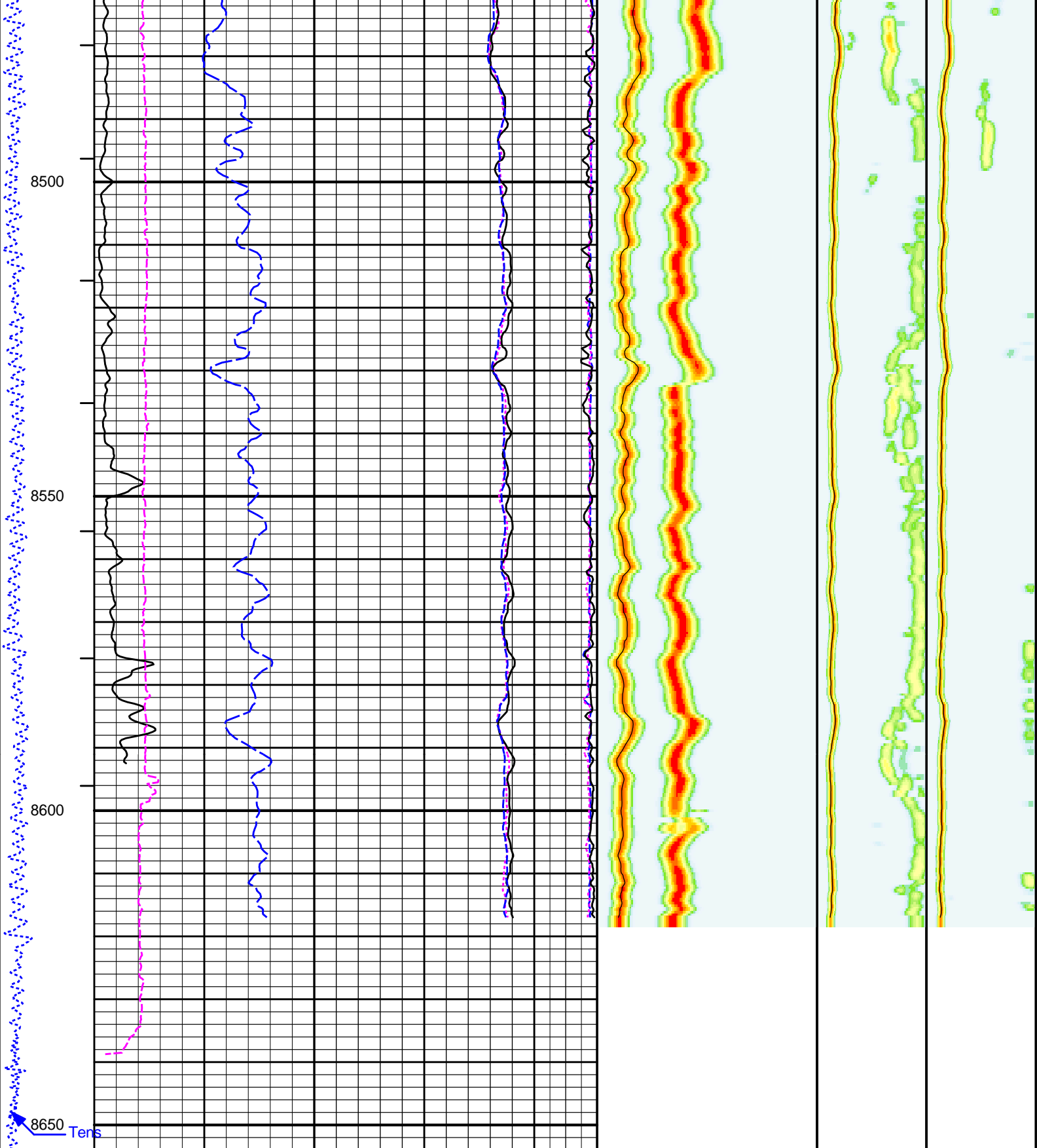
MAIN PASS, 5" = 100'

HALLIBURTON Plot Time: 06-Mar-14 20:24:38
 Plot Range: 8275 ft to 8654.67 ft
 Data: KIND_MOR_CS_1\Well Based\
 Plot File: \\WSTT\WST-I Hard 1-240

REPEAT PASS, 5" = 100'

ITTTotal	0	Gamma API	150	350	DipYDeltaT 1	50	YSBP1					
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1 : 240	0.3	Acou Porosity	-0.1	190	MonoDeltaT 1	30	0MSBP1	30	Mono Semb Vec	190	Dip X Semb Wave	350	Dip Y Semb Wave	350
		decp			microsec per ft									
1K Tens	3K 4	Caliper	14	350	DipXDeltaT 1	50	0XSBP1	30	MonoDeltaT	190	50DipXDeltaT	350	50DipYDeltaT	350
pounds		inches			microsec per ft				microsec per ft		microsec per ft		microsec per ft	
ITTTtotal	0	Gamma API	150	350	DipYDeltaT 1	50	0YSBP1							
		api			microsec per ft									

REPEAT PASS, 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11005602 **Reference Calibration Date:** 06-Mar-14 09:59:43
Engineer: P. DIMPFL **Calibration Date:** 06-Mar-14 10:04:33
Software Version: WL INSITE R3.8.4 (Build 5) **Calibration Version:** 1

Calibrator Source S/N: MP051807-04
 Calibrator API Reference:239.00 api
 Equivalent Calibrator API Reference:243.2 api

Measurement	Measured	Calibrated	Units
Background	21.3	21.2	api
Background + Calibrator	265.1	264.4	api
Calibrator	243.8	243.2	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11005602 **Reference Calibration Date:** 06-Mar-14 10:04:33
Engineer: P. DIMPFL **Calibration Date:** 06-Mar-14 10:16:22
Software Version: WL INSITE R3.8.4 (Build 5) **Calibration Version:** 1

Calibrator Source S/N: MP051807-04
 Calibrator API Reference:239.00 api
 Equivalent Calibrator API Reference:243.2 api

Field Verification	Shop	Field	Units
Background	21.2	22.3	api
Background + Calibrator	264.4	261.4	api
Calibrator	243.2	239.1	api

Shop	Field	Difference	Tolerance
243.2	239.1	4.1	+/- 9.00

ACCELEROMETER AND MAGNETOMETER SHOP CALIBRATION

Tool Name: XRMI-I Instrument - 11838465 **Reference Calibration Date:** 15-May-13 16:05:55
Engineer: B. CRAWFORD **Calibration Date:** 02-Jan-14 15:40:20
Software Version: WL INSITE R3.8.10 (Build 5) **Calibration Version:** 1

Reference Gravity Field: 1.0000 g
 Reference Magnetic Field: 52673.0000 nT

* QF : value of 0 is shown for bad quality if | data - reference | > (2 * standard deviation) and > (0.5% of reference value)

ACCELEROMETER CALIBRATION RAW DATA VALUE

Raw Acc X	Raw Acc Y	Raw Acc Z	Gravity	Quality %	QF
7043.2500	-17825.7500	123.7500	1.0014	99.8570	1
10440.2500	20410.7500	121.2500	1.0007	99.9890	1

-18113.2500	-6042.7500	121.2500	1.0007	99.9298	1
-2984.2500	19098.7500	131.2500	0.9990	99.9039	1
18898.5000	4298.5000	137.5000	0.9993	99.9308	1
2293.2500	19226.2500	129.5000	0.9989	99.8932	1
6230.5000	17073.0000	3520.0000	1.0036	99.6368	1
1745.0000	19283.0000	91.5000	0.9990	99.9044	1
19353.2500	-72.2500	97.0000	0.9993	99.9335	1
-367.2500	-19109.2500	86.7500	1.0017	99.8302	1
-18975.7500	-2282.2500	90.7500	1.0004	99.9643	1
-4129.7500	-17159.0000	3558.5000	0.9964	99.6424	1
-15815.5000	-8029.5000	-3396.5000	1.0000	99.9989	1

ACCELEROMETER QUALITY SUMMARY

Average Calculated Gravity Field	1.0000	g
Standard Deviation Calculated Gravity Field	0.0018	g

ACCELEROMETER GAIN AND OFFSET

	GAIN	OFFSET
ACC X	0.0000519616	-0.0063567073
ACC Y	0.0000520119	-0.0074668438
ACC Z	0.0001051923	-0.0080547389

* QF : value of 0 is shown for bad quality if | data - reference | > (3 * standard deviation) and > (1% of reference value)

MAGNETOMETER CALIBRATION RAW DATA VALUE

Raw Mag X	Raw Mag Y	Raw Mag Z	Magnetic	Quality %	QF
659.0000	11191.5000	-1446.0000	52689.3867	99.9689	1
11448.2500	-1044.7500	-1360.2500	52732.4492	99.8871	1
-2601.5000	-10961.2500	-1531.0000	52683.7578	99.9796	1
-10919.7500	2114.5000	-1418.7500	52674.8086	99.9966	1
-1692.2500	-10209.0000	3855.5000	52675.8047	99.9947	1
-2965.2500	-10860.0000	-1325.2500	52608.5703	99.8777	1
26.7500	-10373.5000	-5290.7500	52718.1563	99.9143	1
-10148.2500	-660.2500	-5325.0000	52677.1836	99.9921	1
-296.5000	10252.0000	-5282.0000	52696.2070	99.9559	1
10289.0000	2270.5000	-5181.2500	52598.4805	99.8585	1
169.0000	11214.7500	-446.0000	52649.1211	99.9547	1
6868.7500	4430.0000	-8637.5000	52671.2773	99.9967	1

MAGNETOMETER QUALITY SUMMARY

Average Calculated Magnetic Field	52672.9336	nT
Standard Deviation Calculated Magnetic Field	39.0829	nT

MAGNETOMETER GAIN AND OFFSET

	GAIN	OFFSET
MAG X	4.6505560875	-800.3454589844
MAG Y	4.6703696251	258.4656677246
MAG Z	4.6573987007	3275.0739746094

Noise Level Value: 1.043656 cnts

Noise Level Cal Value: 0.0001 g

DIPMETER SHOP CALIBRATION

Tool Name: XRMI-I Mandrel - 11838466

Reference Calibration Date: 02-Jan-14 19:41:36

Engineer: Z. TAYLOR

Calibration Date: 25-Jan-14 10:54:30

Software Version: WL INSITE P3 8.12 (Build 3)

Calibration Version: 1

Tool Temperature: 71.77 degF

PAD RESISTIVITIES

Measurement	Measured	Calibrated	Measured	Calibrated	Measured	Calibrated	Units
Pads #1-3:	0.448	0.450	0.448	0.450	0.448	0.450	ohmm
Pads #4-6:	0.448	0.450	0.447	0.450	0.448	0.450	ohmm
Cal0 #1-3:	0.043	-----	0.044	-----	0.044	-----	ohmm
Cal0 #4-6:	0.043	-----	0.045	-----	0.044	-----	ohmm

RELATIVE PAD VOLTS

Measurement	Measured	Calibrated
Air:	1.000	1.000
Zero:	0.000	0.000
Calibrate:	0.000	0.000

DIPMETER FIELD CALIBRATION

Tool Name:	XRMI-I Mandrel - 11838466	Reference Calibration Date:	25-Jan-14 10:54:30
Engineer:	Z. TAYLOR	Calibration Date:	25-Jan-14 10:59:06
Software Version:	WL INSITE R3.8.12 (Build 3)	Calibration Version:	1

PAD RESISTIVITIES

Measurement	Shop	Field	Units
Reflvl Pad 1:	20.245	20.248	ohmm
Reflvl Pad 2:	21.079	21.122	ohmm
Reflvl Pad 3:	21.015	21.061	ohmm
Reflvl Pad 4:	20.493	20.551	ohmm
Reflvl Pad 5:	21.299	21.256	ohmm
Reflvl Pad 6:	21.037	20.988	ohmm

SIX ARM CALIPER SHOP CALIBRATION

Tool Name:	XRMI-I Mandrel - 11838466	Reference Calibration Date:	02-Jan-14 17:46:49
Engineer:	Z. TAYLOR	Calibration Date:	25-Jan-14 10:41:15
Software Version:	WL INSITE R3.8.12 (Build 3)	Calibration Version:	3

CALIPERS AND RINGS

Caliper	Large 15.00 in	Small 7.000 in	Units
CALIPER 1-4:			
Measured	14.985	6.987	in
Calibrated	15.000	7.000	in
CALIPER 2-5:			
Measured	15.043	7.136	in
Calibrated	15.000	7.000	in
CALIPER 3-6:			
Measured	15.010	7.072	in
Calibrated	15.000	7.000	in

TOLERANCE CHECK

Measurment	Difference	Tolerance	Pass/Fail	Units
Caliper 1-4 Large	0.010	0.250	Passed	in
Caliper 1-4 Small	0.010	0.250	Passed	in
Caliper 2-5 Large	-0.040	0.250	Passed	in
Caliper 2-5 Small	-0.140	0.250	Passed	in
Caliper 3-6 Large	-0.010	0.250	Passed	in

Caliper 3-6 Small	0.010	0.250	Passed	in
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PRESSURE PAD		
	Measured	Calibrated
Closed	0.001	0.000
Opened	0.999	1.000

SIX ARM CALIPER FIELD CALIBRATION

Tool Name: XRMI-I Mandrel - 11838466 **Reference Calibration Date:** 25-Jan-14 10:41:15
Engineer: Z. TAYLOR **Calibration Date:** 25-Jan-14 10:41:43
Software Version: WL INSITE R3.8.12 (Build 3) **Calibration Version:** 2

CALIPERS AND RINGS					
Caliper	Shop	Field	Difference	Tolerance	Units
Caliper 1-4	7.000	6.998	0.002	0.250	in
Caliper 2-5	7.000	6.988	0.012	0.250	in
Caliper 3-6	7.000	6.969	0.031	0.250	in

PASS/FAIL SUMMARY

Ring Check: Passed

CALIBRATION SUMMARY

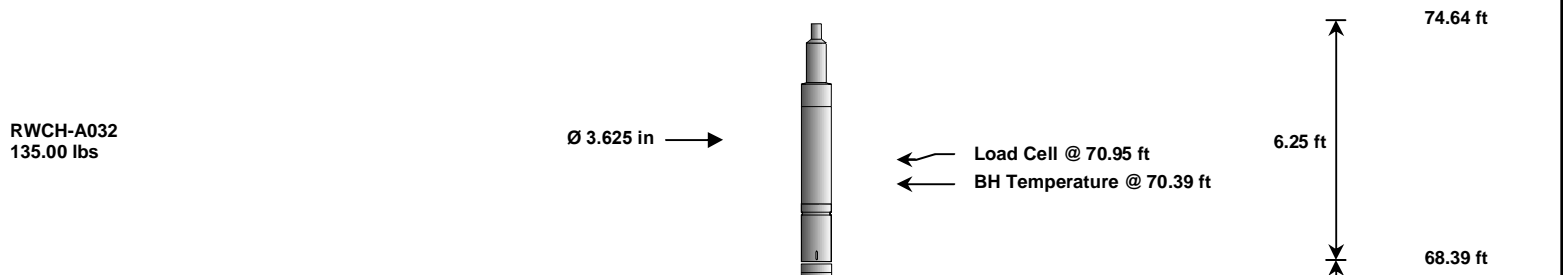
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11005602						
Gamma Ray Calibrator	243.2	239.1	-----	4.1	+/- 9.00	api
XRMI-I Mandrel-11838466						
Reflvl Pad 1	20.245	20.248	-----	-0.003	N/A	ohmm
Reflvl Pad 2	21.079	21.122	-----	-0.043	N/A	ohmm
Reflvl Pad 3	21.015	21.061	-----	-0.046	N/A	ohmm
Reflvl Pad 4	20.493	20.551	-----	-0.058	N/A	ohmm
Reflvl Pad 5	21.299	21.256	-----	0.043	N/A	ohmm
Reflvl Pad 6	21.037	20.988	-----	0.049	N/A	ohmm
CAL 1-4	7.000	6.998	-----	0.002	+/- 0.250	in
CAL 2-5	7.000	6.988	-----	0.012	+/- 0.250	in
CAL 3-6	7.000	6.969	-----	0.031	+/- 0.250	in

Data: KIND_MOR_CS_10002 WSTT_XRMI003 06-Mar-14 17:07 Up @8664.8f Date: 06-Mar-14 17:16:59



TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
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GTET-11005602
165.00 lbs

Ø 3.625 in →

8.52 ft

← GammaRay @ 62.32 ft

59.87 ft

Regal Standoff 6_75-
00000001
20.00 lbs

Ø 5.875 in* →

Wavesonic-I-
U67T68R71L70
520.00 lbs

Ø 3.625 in →

34.07 ft

← Wavesonic Delay @ 37.30 ft

XRMI Isolator-
00000070
32.50 lbs

Ø 4.500 in →

1.30 ft

25.80 ft

24.49 ft

XRMI-I Instrument-
11838465
290.00 lbs

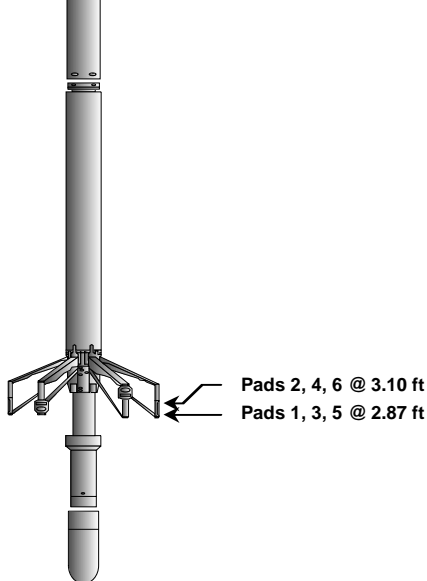
Ø 4.500 in →

13.00 ft



XRMI-I Mandrel-
11838466
206.00 lbs

Ø 5.000 in →
Ø 4.500 in →



11.49 ft
11.16 ft
0.33 ft
0.33 ft
0.00 ft

Bull Nose-00000029
5.00 lbs

Ø 2.750 in →

Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	A032	135.00	6.25	68.39	300.00
GTET	Gamma Telemetry Tool	11005602	165.00	8.52	59.87	60.00
WSTT	WaveSonic Insite	U67T68R71L70	520.00	34.07	25.80	30.00
RSOF	Regal Standoff 6.75in	00000001	20.00	0.52	* 53.83	300.00
	Isolator for the XRMI tool	00000070	32.50	1.30	24.49	300.00
XRMI	XRMI Navigation - Insite	11838465	290.00	13.00	11.49	30.00
XRMI-I	XRMI Imager - Insite	11838466	206.00	11.16	0.33	30.00
BLNS	Bull Nose	00000029	5.00	0.33	0.00	300.00

Total **1,373.50** **74.64**

* Not included in Total Length and Length Accumulation.

Data: KIND_MOR_CS_1\0002 WSTT_XRMIDLE

Date: 06-Mar-14 15:33:36

HALLIBURTON

CUSTOMER EVENT LOG

Event Type	Time & Date	Depth (ft)	Event Description
	06-Mar-14 16:15:46	7119.50	Logging 001 06-Mar-14 16:15 Dn @7119.5f
	06-Mar-14 16:33:03	7845.58	Halting 001 06-Mar-14 16:15 Dn @7119.5f
	06-Mar-14 16:42:26	8656.00	Logging 002 06-Mar-14 16:42 Up @8656.0f
	06-Mar-14 17:01:44	8245.02	Halting 002 06-Mar-14 16:42 Up @8656.0f
	06-Mar-14 17:07:04	8664.75	Logging 003 06-Mar-14 17:07 Up @8664.8f
	06-Mar-14 17:51:31	6702.36	Halting 003 06-Mar-14 17:07 Up @8664.8f

Data: KIND_MOR_CS_1\0002 WSTT_XRMIHW11574

Date: 06-Mar-14 20:19:53

COMPANY	KINDER MORGAN CO2 Co. L.P.		
WELL	COW CANYON CS #1		
FIELD	MCELMO DOME		
COUNTY	MONTEZUMA	STATE	CO

HALLIBURTON

WAVESONIC

FIELD COPY

