Radial Cement Bond Gamma Ray CCL Log

Cutters Wireline Service, Inc.
A Cased Hole Wireline Company

Company	Synergy Resources Corporation
Well	Vista 44 2 C
Field	Wattenberg
County	Weld
State	Colorado

Company Synergy Resources Corporation
Well Vista 44 2 C
Field Wattenberg
County Weld State Colorado

Location: API #: 05-123-41063
2063' FSL & 254' FWL
NWSW
SEC 2 TWP 4-N RGE 68W

Other Services

Permanent Datum	Ground Level	Elevation 5000'	Elevation K.B. 5020' D.F. 5019' G.L. 5000'
Log Measured From	KB 20' APD		
Drilling Measured From	KB		

Date	03-31-2016
Run Number	One
Depth Driller	11839'
Depth Logger	6644'
Bottom Logged Interval	6642'
Top Log Interval	Surface
Open Hole Size	6 1/8"
Type Fluid	Water
Density / Viscosity	-
Max. Recorded Temp.	227 F
Estimated Cement Top	Surface
Time Well Ready	On Arrival
Time Logger on Bottom	See Log
Equipment Number	WL - 203
Location	Windsor Colorado
Recorded By	Tadd Sprayberry
Witnessed By	Chris Rodriguez

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String				
Prot. String				
Production String	7"	29#	Surface	7650'
Liner	4 1/2"	13.5#	6634'	11839'

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

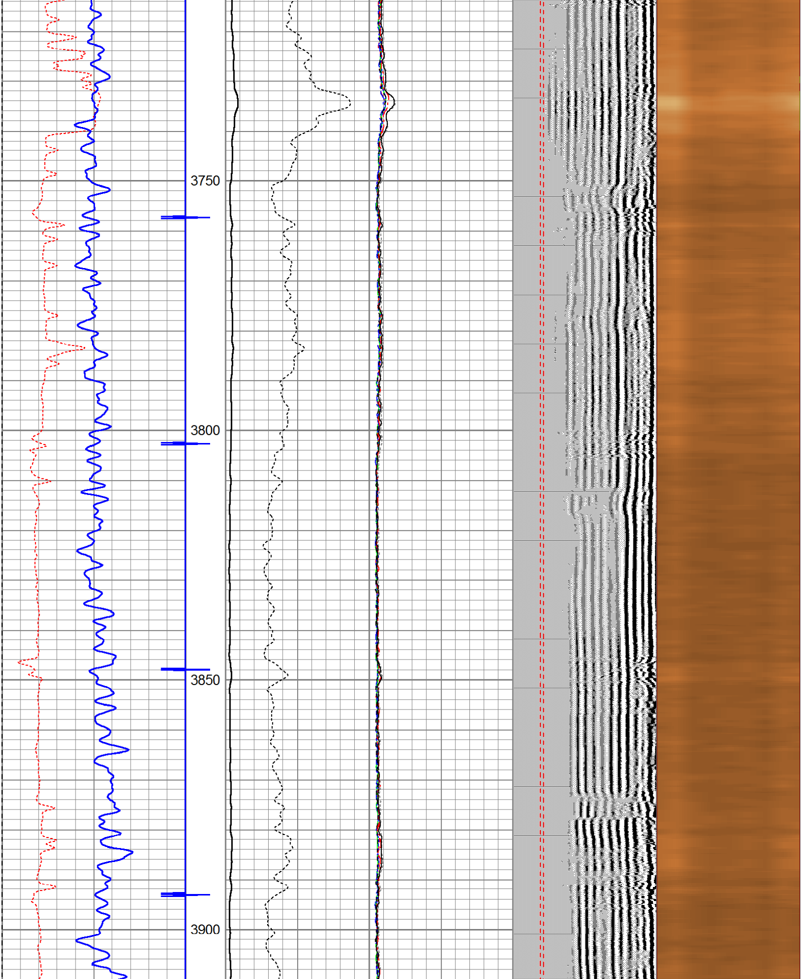
********** Thank You for Using Cutters Wireline **********
Primary log on well

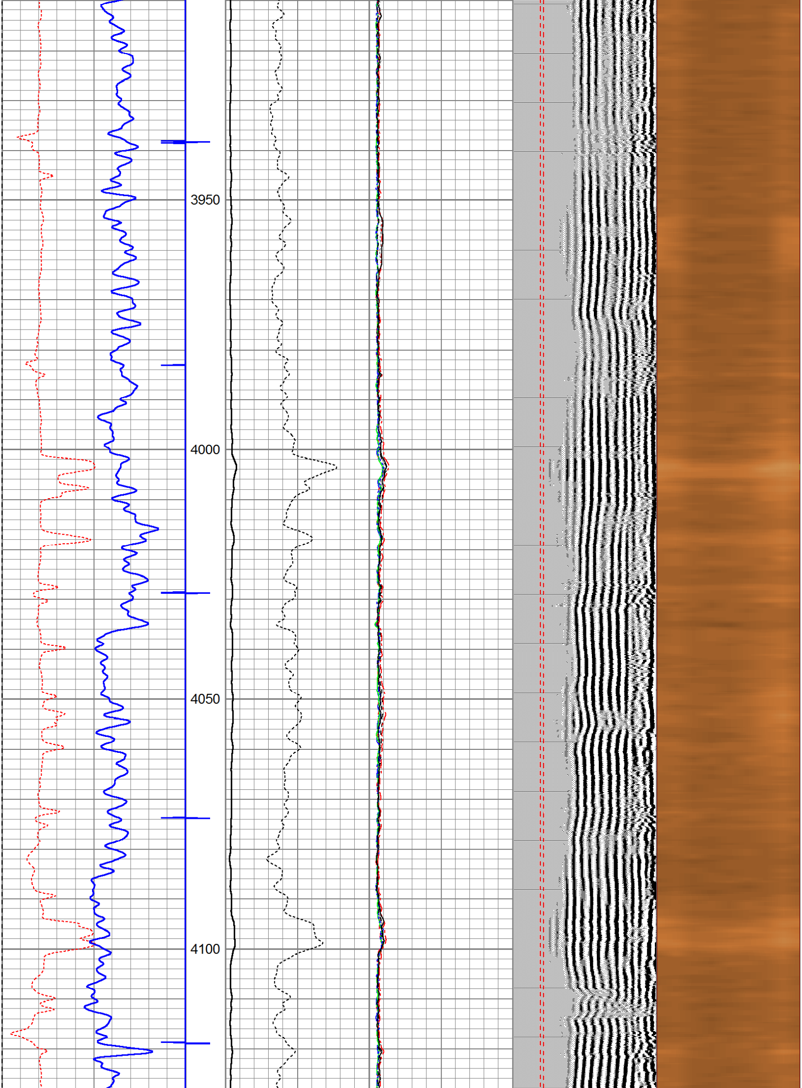
Cutters Wireline Service, Inc.
A Cased Hole Wireline Company

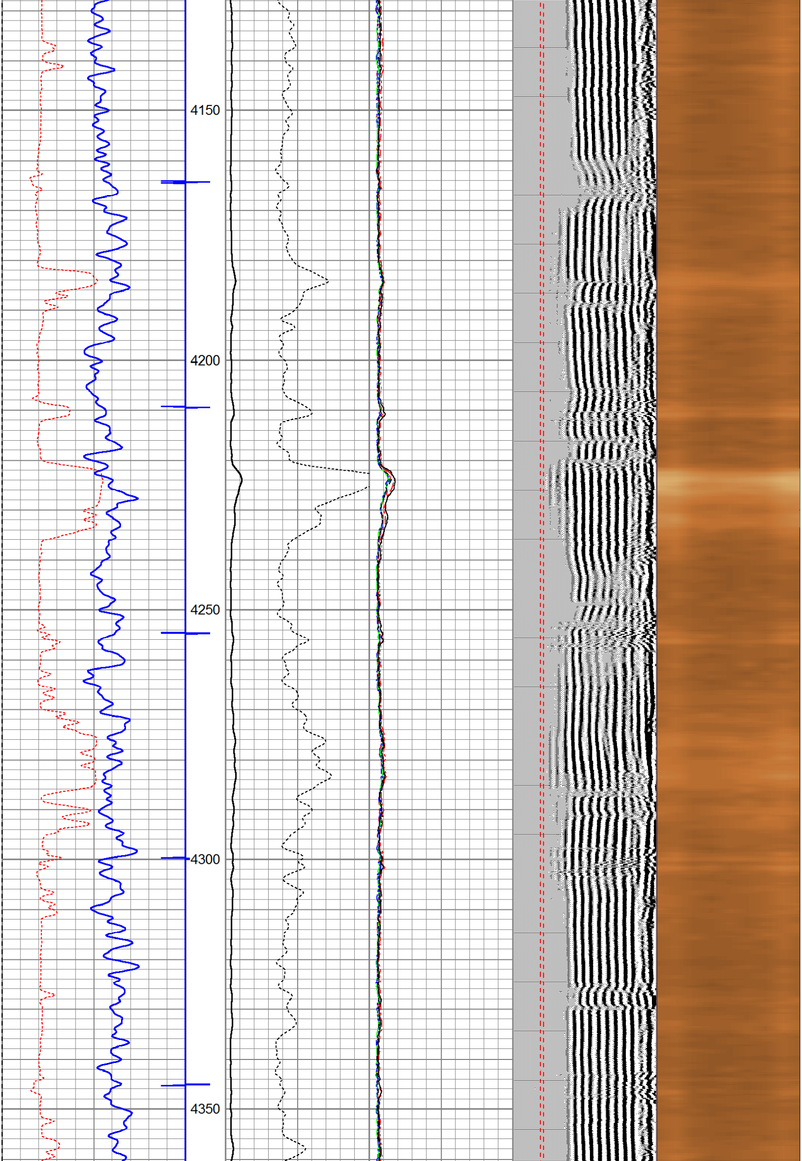
Main Pass 5" = 100' (2800 psi)

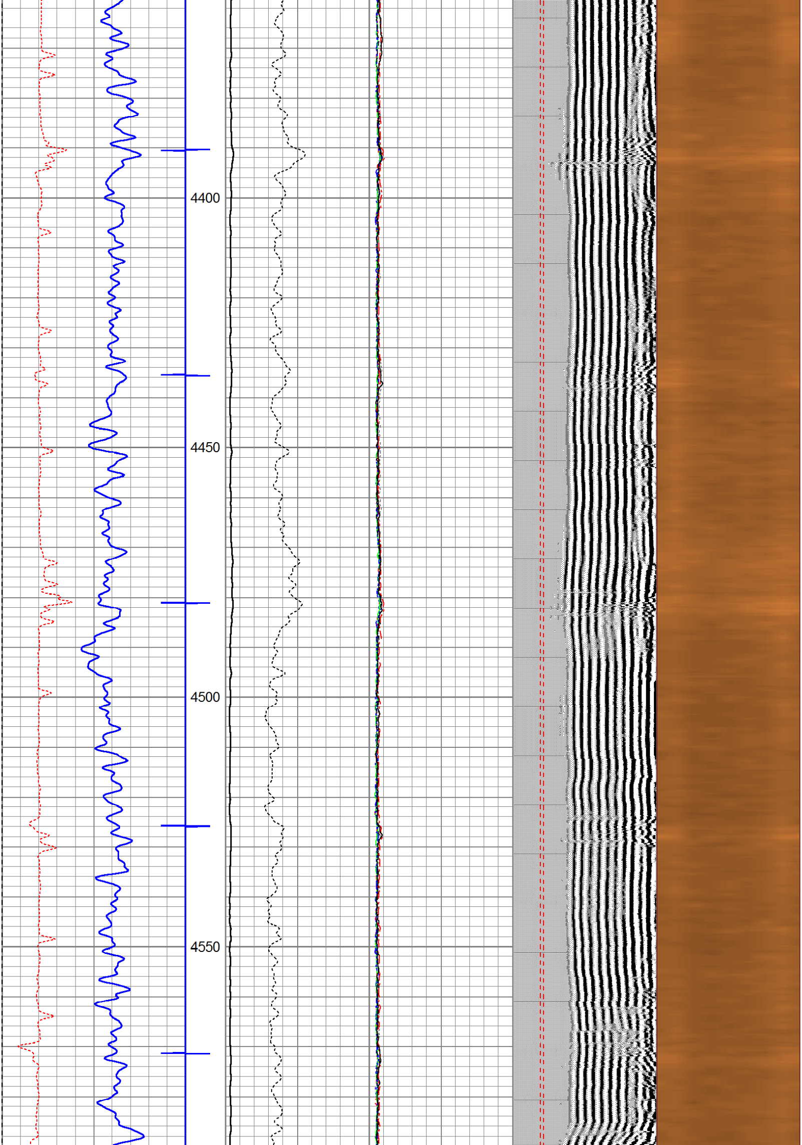
Database File: c:\warrior\data\synergy_vista_44_2c_rbl_mac\synergy_vista_44_2c_rbl.db
Dataset Pathname: passrblF
Presentation Format: rbl7
Dataset Creation: Thu Mar 31 17:19:58 2016
Charted by: Depth in Feet scaled 1:240

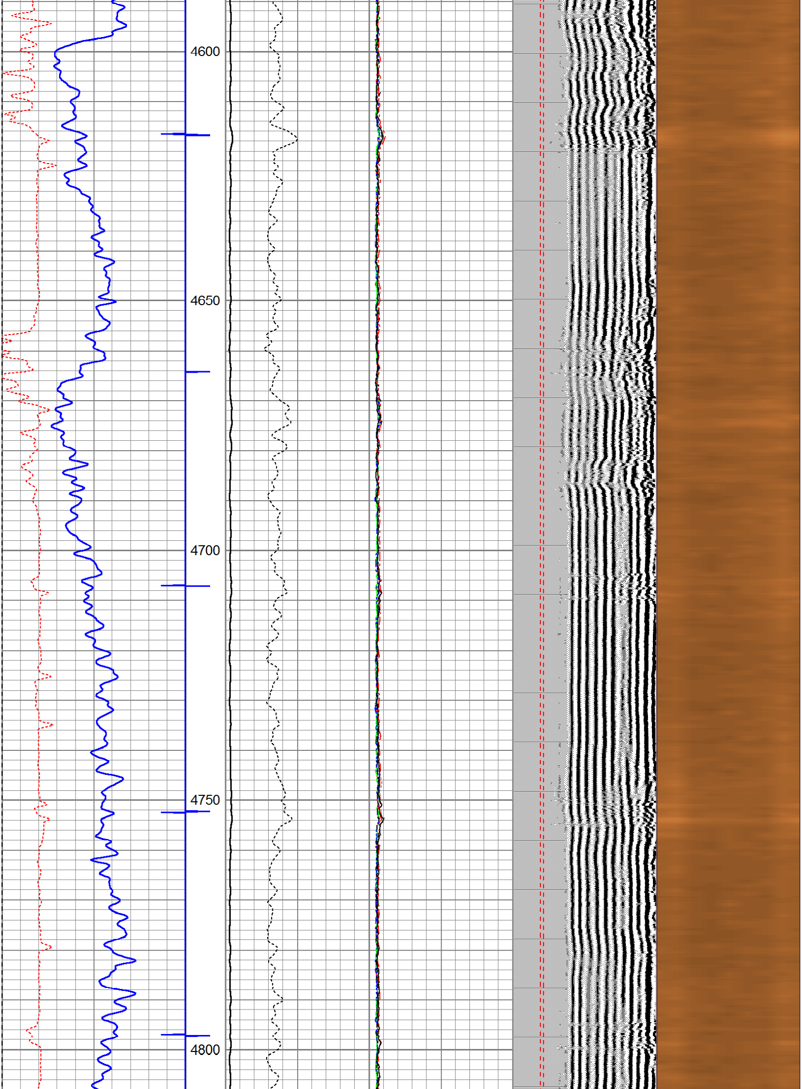
366 TT (usec) 225 0 GR (GAPI) 150 0 LTEN (lb) 3000 CCL	0 Amplitude (mV) 100 Amplified Amplitude 0 (mV) 10	-5 AMPS2 150 -5 AMPS3 150 -5 AMPS4 150 -5 AMPS5 150 -5 AMPS6 150 -5 AMPS7 150 -5 AMPS8 150 -5 AMPS1 150	200 VDL 1200 Free Pipe Gate	Cement Map 1 80

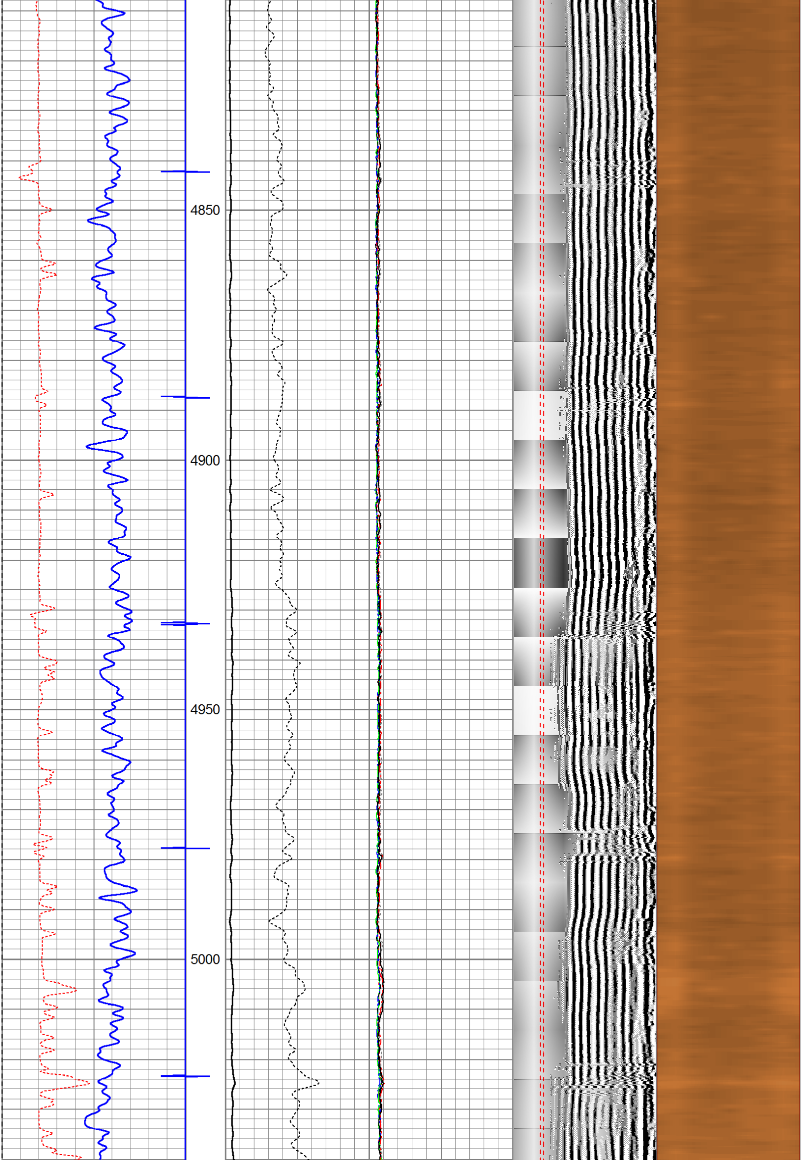


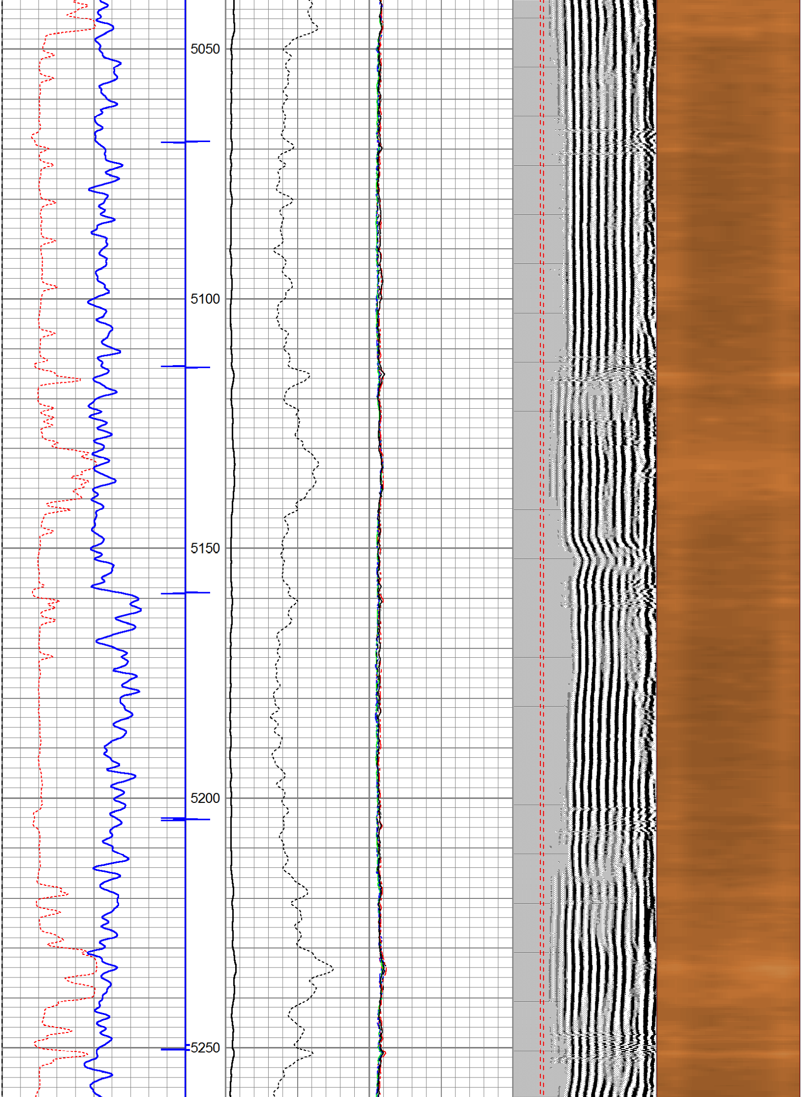


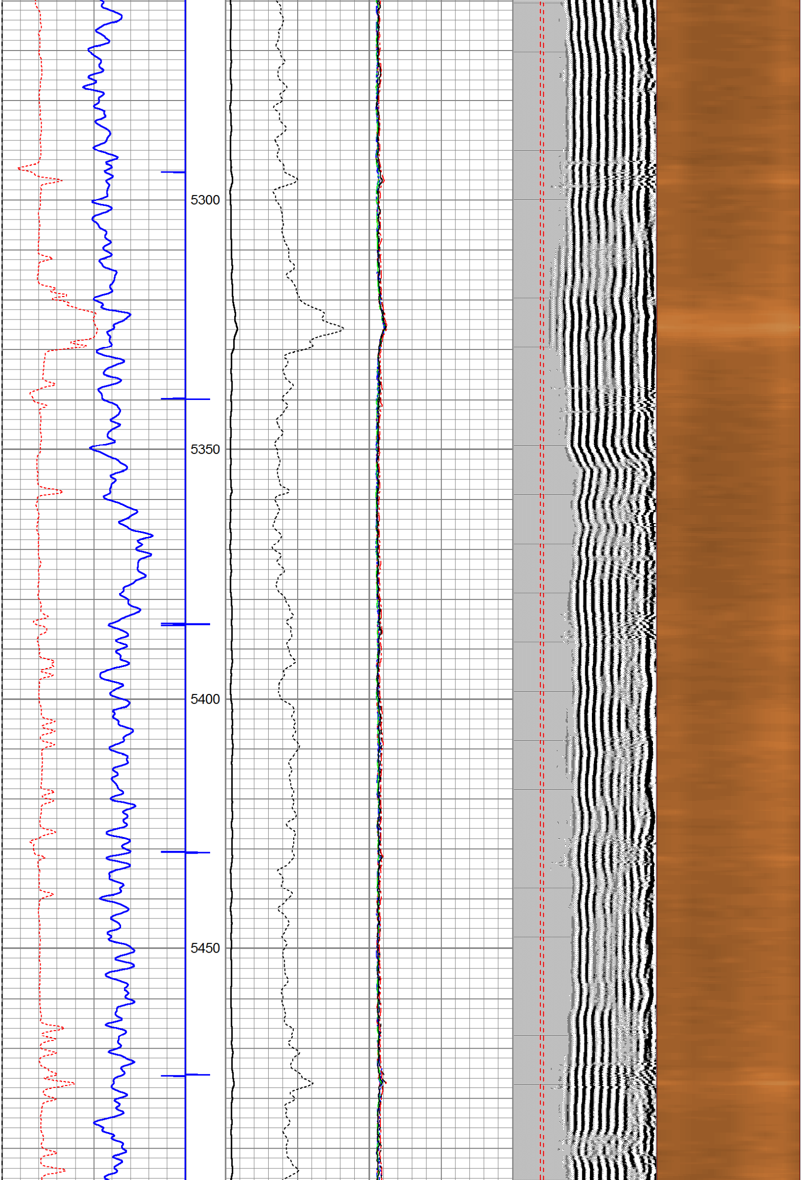


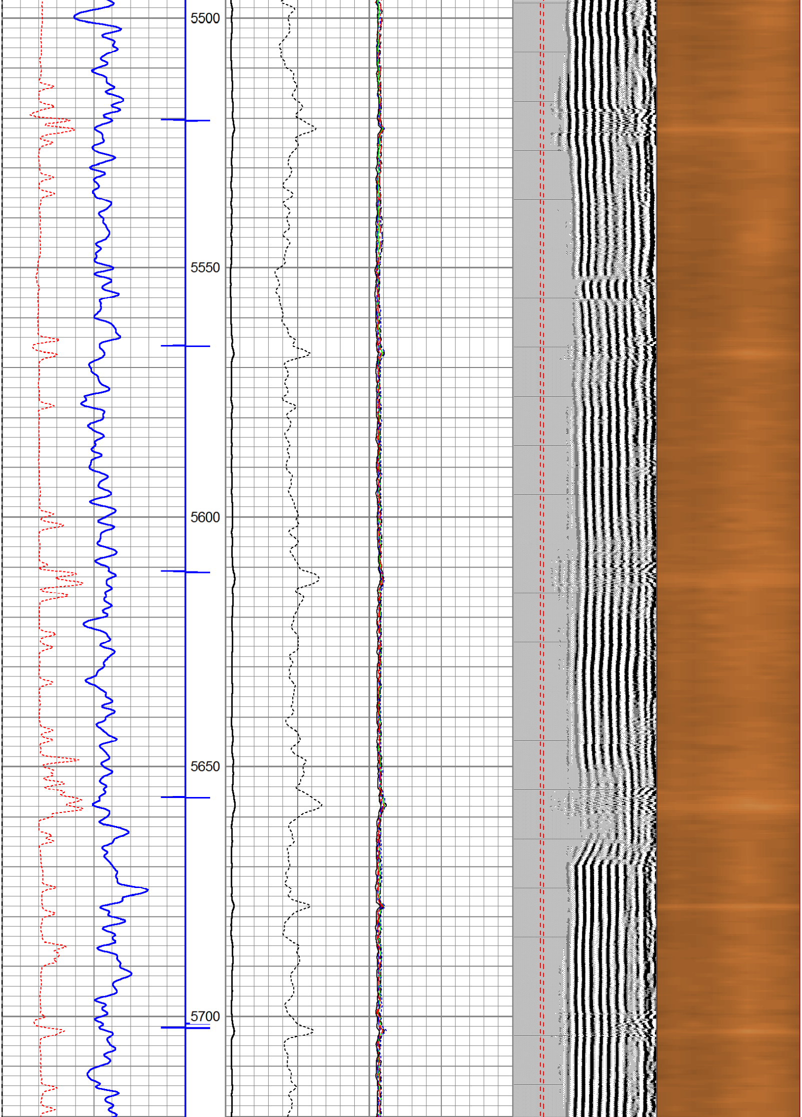


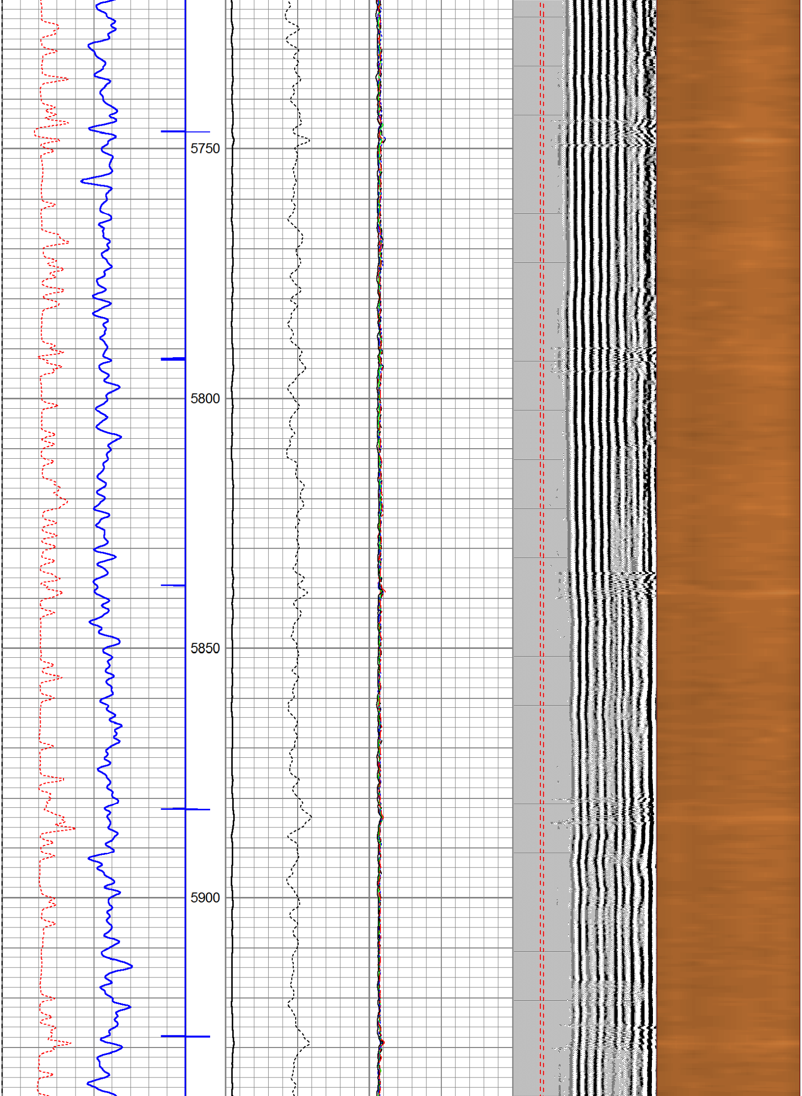


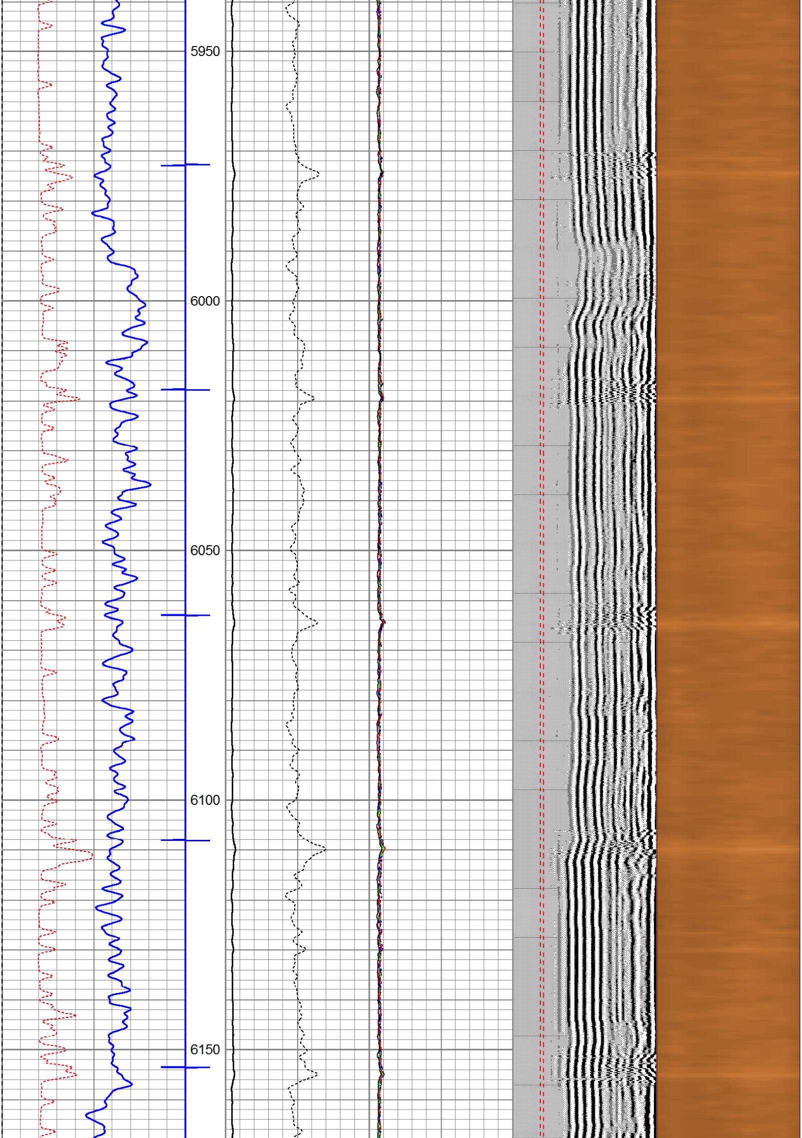


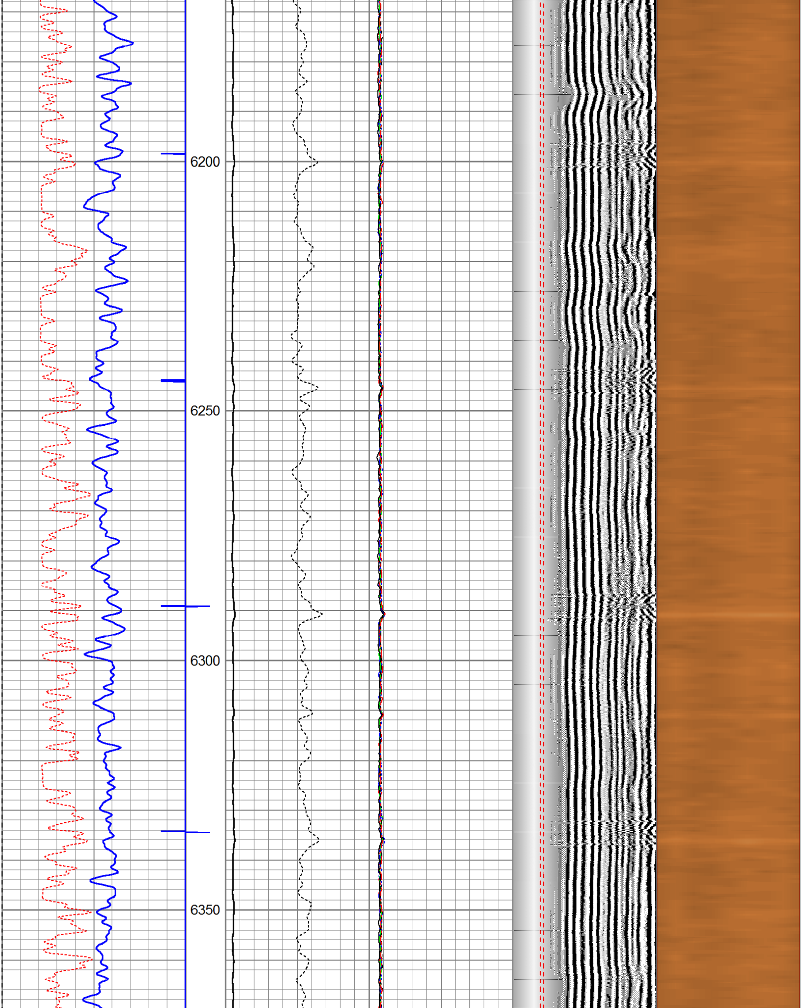


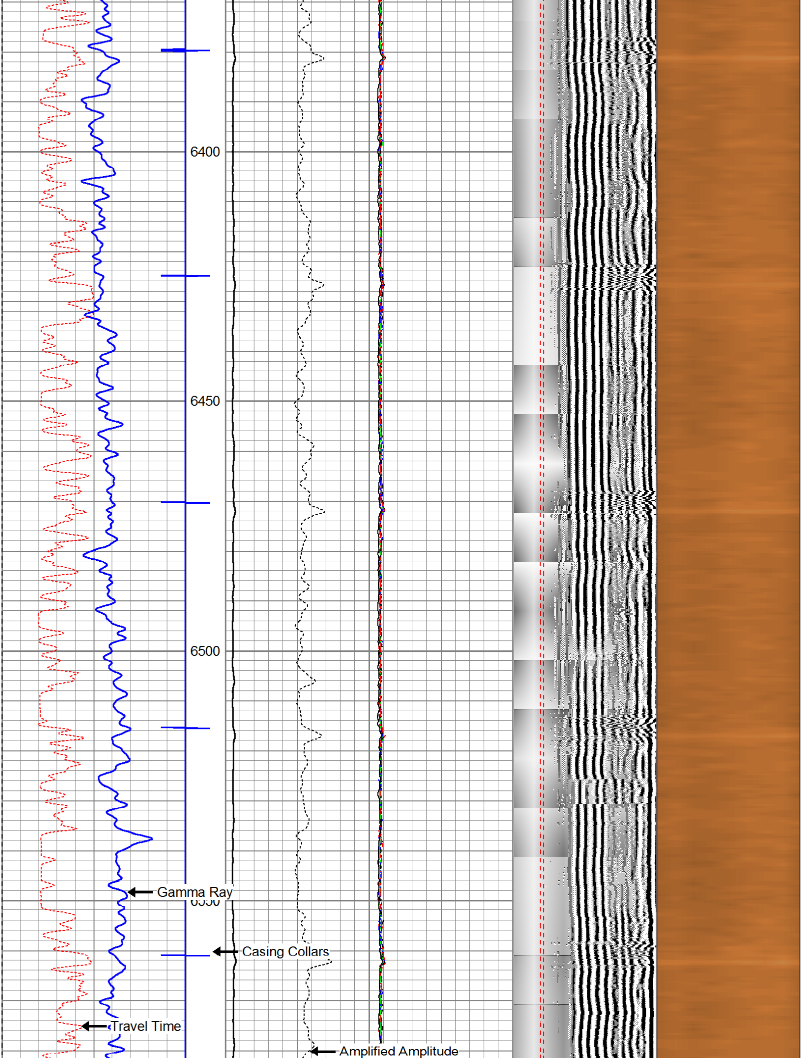


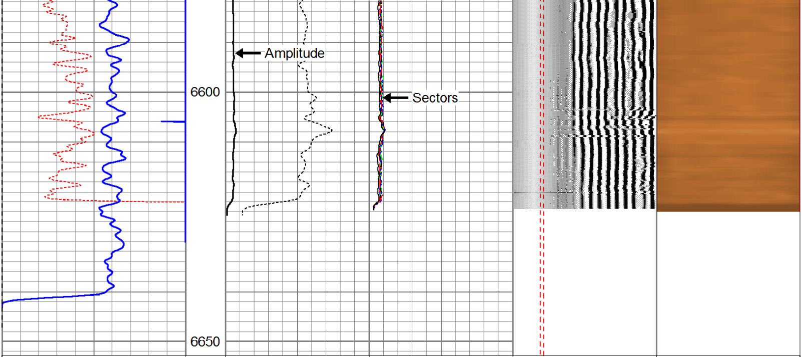












366 TT (usec) 225		0 Amplitude (mV)100	-5 AMPS2 150	200 VDL 1200	Cement Map
0 GR (GAPI) 150		Amplified Amplitude	-5 AMPS3 150		1 80
0 LTEN (lb) 3000		0 (mV) 10	-5 AMPS4 150	Free Pipe Gate	
	CCL		-5 AMPS5 150		
			-5 AMPS6 150		
			-5 AMPS7 150		
			-5 AMPS8 150		
			-5 AMPS1 150		

Cutters®
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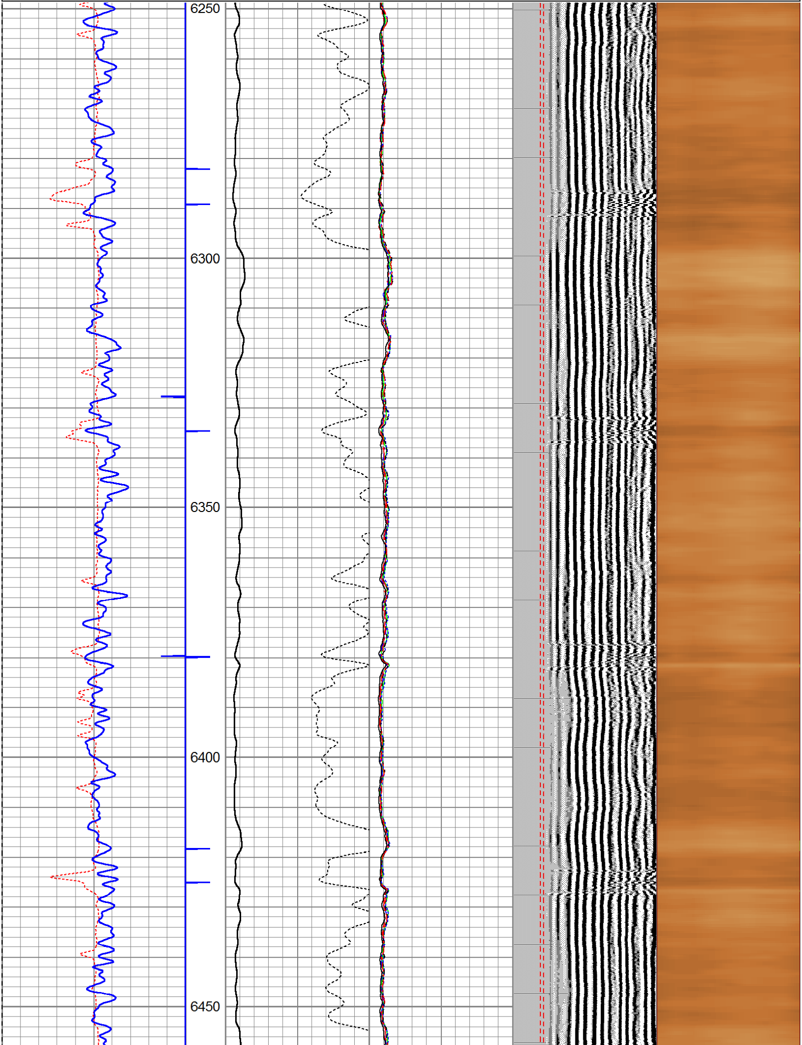
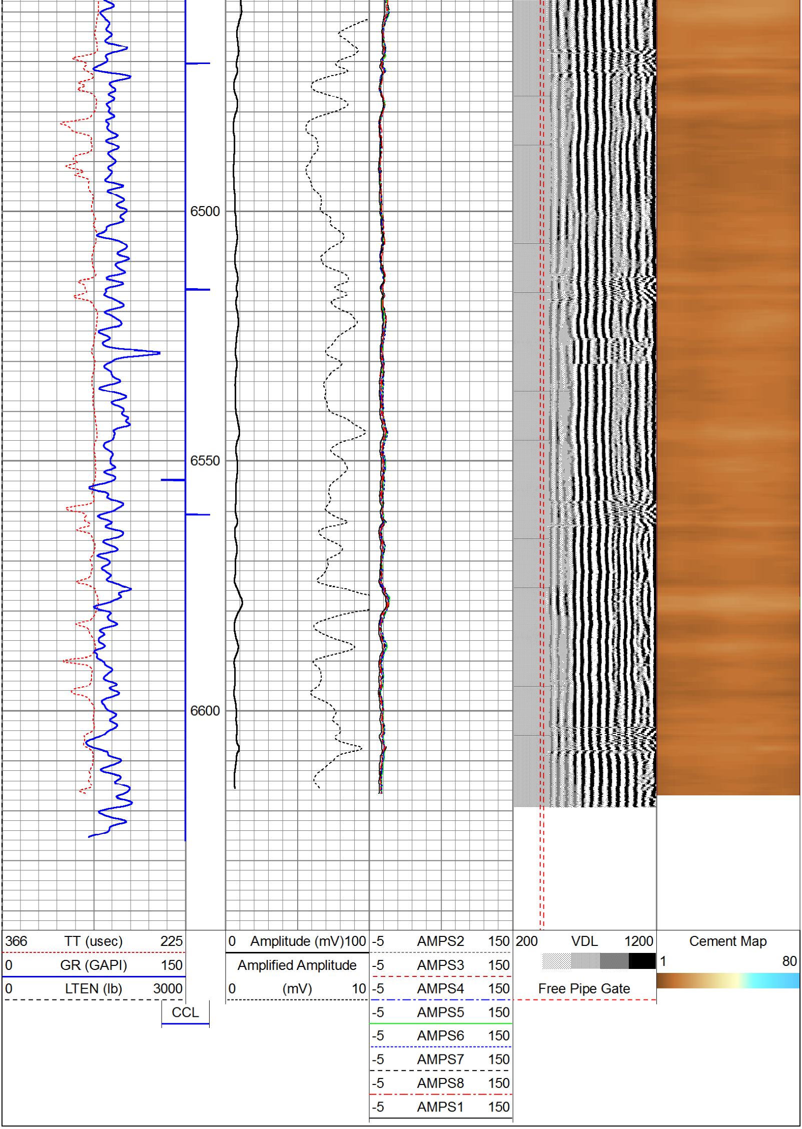
Repeat Pass 5" = 100' (0 psi)

Database File:	c:\warrior\data\synergy_vista_44_2c_rbl_mac\synergy_vista_44_2c_rbl.db
Dataset Pathname:	pass2.2
Presentation Format:	rbl7
Dataset Creation:	Thu Mar 31 17:24:12 2016 by Calc SCH 120430
Charted by:	Depth in Feet scaled 1:240

366 TT (usec) 225		0 Amplitude (mV)100	-5 AMPS2 150	200 VDL 1200	Cement Map
0 GR (GAPI) 150		Amplified Amplitude	-5 AMPS3 150		1 80
0 LTEN (lb) 3000		0 (mV) 10	-5 AMPS4 150	Free Pipe Gate	
	CCL		-5 AMPS5 150		
			-5 AMPS6 150		
			-5 AMPS7 150		
			-5 AMPS8 150		
			-5 AMPS1 150		





Log Variables

Database:C:\Warrior\Data\synergy_vista_44_2c_rbl_mac\synergy_vista_44_2c_rbl.db
Dataset: field/well/run1/pass6

Top - Bottom

MinAPIWall	CASEID	PPT	CASEWGHT	MAXAMPL	MINAMPL	MINATTN	SRFTEMP
in	in	usec	lb/ft	mV	mV	db/ft	degF
0.356	6.184	0	17	61.1961	1	0.8	0
CASEOD	PERFS	TDEPTH	BOTTEMP	BOREID			
in		ft	degF	in			
7	0	0	100	8.75			

Calibration Report

Database File:	C:\Warrior\Data\synergy_vista_44_2c_rbl_mac\synergy_vista_44_2c_rbl.db
Dataset Pathname:	pass7
Dataset Creation:	Thu Mar 31 11:23:26 2016 by Log SCH 120430

60 Arm Multi Sensor Caliper Calibration Report

Serial Number:	FW1211-34
Tool Model:	60
Performed:	Mon Mar 28 11:02:31 2016

Ref ID:	5.00	6.00	7.00	8.00	9.00	10.00
Arm1	2.48	2.94	3.42	3.90	4.39	4.89
Arm2	2.71	3.14	3.59	4.05	4.56	5.11
Arm3	2.38	2.83	3.31	3.79	4.28	4.78
Arm4	2.92	3.39	3.87	4.37	4.86	5.28
Arm5	2.35	2.80	3.27	3.74	4.23	4.73
Arm6	1.90	2.35	2.82	3.30	3.78	4.29
Arm7	2.19	2.66	3.14	3.66	4.22	4.76
Arm8	2.52	2.98	3.46	3.95	4.43	4.89
Arm9	2.45	2.92	3.37	3.85	4.34	4.84
Arm10	2.22	2.68	3.16	3.64	4.14	4.66
Arm11	2.37	2.82	3.29	3.78	4.29	4.79
Arm12	2.44	2.89	3.39	3.90	4.38	4.77
Arm13	2.47	2.95	3.44	3.95	4.42	4.89
Arm14	2.76	3.22	3.69	4.18	4.66	5.13
Arm15	2.53	2.97	3.44	3.93	4.40	4.85
Arm16	2.30	2.77	3.28	3.81	4.32	4.77
Arm17	2.30	2.77	3.24	3.74	4.23	4.72
Arm18	2.61	3.01	3.44	3.88	4.31	4.73
Arm19	2.28	2.78	3.28	3.81	4.33	4.85
Arm20	2.29	2.77	3.27	3.78	4.30	4.80
Arm21	2.29	2.79	3.28	3.80	4.32	4.80
Arm22	2.45	2.93	3.41	3.91	4.38	4.85
Arm23	2.48	2.97	3.47	4.00	4.50	4.95
Arm24	2.39	2.88	3.39	3.91	4.41	4.86
Arm25	2.51	2.99	3.47	3.97	4.44	4.90
Arm26	2.50	3.02	3.55	4.08	4.58	5.05
Arm27	2.57	3.06	3.55	4.04	4.54	5.04
Arm28	2.82	3.29	3.73	4.17	4.62	5.08
Arm29	2.48	2.96	3.45	3.94	4.43	4.86
Arm30	2.27	2.77	3.27	3.77	4.28	4.77

* Bad

Ref ID:	5.00	6.00	7.00	8.00	9.00	10.00
Arm31	2.45	2.97	3.49	4.00	4.50	4.98
Arm32	2.33	2.82	3.34	3.87	4.38	4.84
Arm33	2.18	2.68	3.19	3.69	4.19	4.71
Arm34	2.12	2.64	3.17	3.71	4.24	4.74
Arm35	2.63	3.12	3.62	4.13	4.62	5.09
Arm36	2.27	2.75	3.25	3.74	4.25	4.75
Arm37	2.75	3.26	3.76	4.24	4.73	5.21
Arm38	2.23	2.73	3.20	3.67	4.17	4.68
Arm39	2.53	3.01	3.50	3.98	4.47	4.94
Arm40	2.41	2.92	3.43	3.94	4.44	4.92
Arm41	2.38	2.89	3.41	3.91	4.43	4.94
Arm42	2.26	2.77	3.32	3.86	4.38	4.84
Arm43	2.45	2.95	3.42	3.88	4.38	4.91
Arm44	2.32	2.81	3.34	3.84	4.33	4.82
Arm45	2.42	2.91	3.44	3.96	4.46	4.93
Arm46	3.10	3.56	4.01	4.45	4.93	5.41
Arm47	2.17	2.62	3.15	3.70	4.26	4.70
Arm48	1.90	2.35	2.82	3.29	3.81	4.33
Arm49	2.25	2.73	3.21	3.69	4.20	4.72
Arm50	2.29	2.74	3.22	3.72	4.23	4.72
Arm51	2.52	2.99	3.44	3.88	4.38	4.94
Arm52	2.29	2.77	3.27	3.78	4.31	4.83
Arm53	2.26	2.71	3.19	3.67	4.18	4.67
Arm54	2.55	3.01	3.49	3.97	4.48	5.01
Arm55	2.14	2.62	3.11	3.60	4.12	4.66
Arm56	2.47	2.90	3.35	3.81	4.32	4.83
Arm57	2.13	2.57	3.04	3.52	4.03	4.55
Arm58	2.20	2.61	3.10	3.63	4.17	4.61
Arm59	2.66	3.12	3.58	4.03	4.52	5.02
Arm60	2.48	2.93	3.40	3.90	4.40	4.88

* Bad

PROBE verifications Calibration Report

	Pre Verification	Post Verification	Casing Check	
Performed:				
Ref ID:	0.00	0.00	0.00	in
Min.	0.00	0.00	0.00	in
Max.	0.00	0.00	0.00	in
Avg.	0.00	0.00	0.00	in
Dia1	0.00	0.00	0.00	in
Dia2	0.00	0.00	0.00	in
Dia3	0.00	0.00	0.00	in
Dia4	0.00	0.00	0.00	in
Dia5	0.00	0.00	0.00	in
Dia6	0.00	0.00	0.00	in
Dia7	0.00	0.00	0.00	in
Dia8	0.00	0.00	0.00	in
Dia9	0.00	0.00	0.00	in
Dia10	0.00	0.00	0.00	in
Dia11	0.00	0.00	0.00	in
Dia12	0.00	0.00	0.00	in
Dia13	0.00	0.00	0.00	in
Dia14	0.00	0.00	0.00	in
Dia15	0.00	0.00	0.00	in
Dia16	0.00	0.00	0.00	in
Dia17	0.00	0.00	0.00	in
Dia18	0.00	0.00	0.00	in
Dia19	0.00	0.00	0.00	in
Dia20	0.00	0.00	0.00	in
Dia21	0.00	0.00	0.00	in
Dia22	0.00	0.00	0.00	in
Dia23	0.00	0.00	0.00	in
Dia24	0.00	0.00	0.00	in
Dia25	0.00	0.00	0.00	in
Dia26	0.00	0.00	0.00	in
Dia27	0.00	0.00	0.00	in

Dia28	0.00	0.00	0.00	in
Dia29	0.00	0.00	0.00	in
Dia30	0.00	0.00	0.00	in

Inclinometer Calibration Report

Performed: Tue Jul 23 14:14:29 2013

	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	-3600.47	3583.90	-1.00	1.00	gee
Y Accelerometer	-3593.83	3573.47	-1.00	1.00	gee
Z Accelerometer	5.33	3616.63	0.00	1.00	gee

EMIT Calibration Report

EMIT Calibration Report

Serial Number:	FW1411-25
Tool Model:	Probe
Performed:	

		Reference		Reading	
Thickness					
	Reference 1:	0.000	in	5500.000	clock cycles
	Reference 2:	0.408	in	12700.000	clock cycles
	Reference 3:		in		clock cycles
	Reference 4:		in		clock cycles
	Reference 5:		in		clock cycles
MAGCAL					
	Reference 1:		in		clock cycles
	Reference 2:		in		clock cycles
	Reference 3:		in		clock cycles
	Reference 4:		in		clock cycles
	Reference 5:		in		clock cycles
	Low Reference:				clock cycle difference
	High Reference:				clock cycle difference
	Low Reference:				A/D conversion
	High Reference:				A/D conversion

Gamma Ray Calibration Report

Type / Serial: GCT_C3 / FW1307-59

SHOP CALIBRATION	Mon Mar 28 10:43:30 2016				
	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	1.0				cps
		0.8500			GAPI/cps
PRIMARY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
BEFORE SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
AFTER SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Segmented Cement Bond Log Calibration Report

Serial Number:	ProFW1211130	
Tool Model:	Probe	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	-0.008	ft

Master Calibration, performed Wed Mar 30 21:21:12 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.002	0.756	1.000	71.921	93.568	1.211
CAL	-0.006	0.897				
5'	-0.010	0.680	1.000	71.921	102.758	1.996
SUM						
S1	0.000	0.770	0.000	100.000	129.915	-0.001
S2	-0.008	0.786	0.000	100.000	126.004	0.950
S3	-0.004	0.772	0.000	100.000	128.933	0.507
S4	-0.002	0.750	0.000	100.000	133.009	0.261
S5	-0.004	0.753	0.000	100.000	132.238	0.484
S6	-0.006	0.771	0.000	100.000	128.789	0.726
S7	-0.004	0.786	0.000	100.000	126.577	0.504
S8	-0.004	0.754	0.000	100.000	131.900	0.495

Internal Reference Calibration, performed Wed Dec 31 18:00:00 1969:

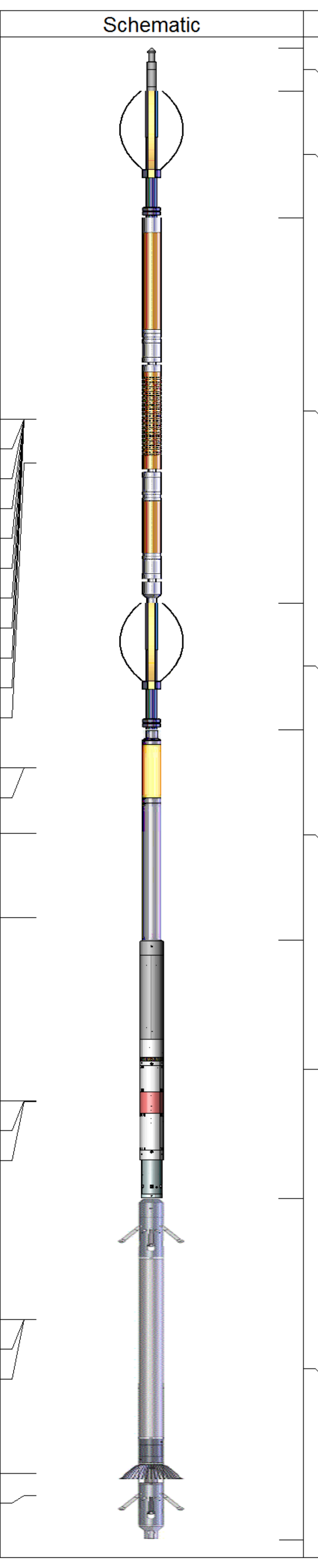
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.006	0.897	1.000	0.000

Air Zero Calibration, performed Thu Sep 20 10:22:24 2012:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000

Sensor	Offset (ft)
WVF3FT	25.45
WVFCAL	25.45
WVFS1	25.45
WVFS2	25.45
WVFS3	25.45
WVFS4	25.45
WVFS5	25.45
WVFS6	25.45
WVFS7	25.45
WVFS8	25.45
WVF5FT	24.45
CCL	17.53
DCCL	17.53
GR	16.03
GCT_HV	14.12
DTHK	9.96
Thickness	9.96
MAGCAL	9.94
ACCX	5.00
ACCY	5.00
ACCZ	5.00
Meas	1.50
ETemp	1.00

Schematic



Description	Len (ft)	OD (in)	Wt (lb)
1.4375CHD Titan Cable Head 1 7/16	1.00	1.44	10.00
Probe Probe 2 3/4 Centralizer	2.88	2.75	20.00
RBT-Probe (ProFW1211130) Probe 2.75" Radii Bond Tool	8.75	2.75	90.00
Probe Probe 2 3/4 Centralizer	2.88	2.75	20.00
GR-GCT_C3 (FW1307-59) Probe Digital Gamma CCL Corrosion	4.77	2.75	50.00
EMIT-Probe (FW1411-25)	5.87	3.50	90.00
Probe_MFCAL-60 (FW1211-34) Probe 60 Arm Caliper	7.75	3.63	135.00

Dataset:	synergy_vista_44_2c_rbl.db: field/well/run1/pass7
Total Length:	33.89 ft
Total Weight:	415.00 lb
O.D.	3.63 in

Company	Synergy Resources Corporation		
Well	Vista 44 2 C		
Field	Wattenberg		
County	Weld	State	Colorado

Cutters Wireline Services, Inc.
A Cased Hole Wireline Company

Radial Cement Bond
Gamma Ray CCL
Log