Company FOUNDATION ENERGY MANAGEMENT,LLC
Well STATE 36-3-9
Field WILCAT
County WELD State CO

HALLIBURTON

RESERVOIR MONITOR
TOOL ELITE
RMT i

Company	FOUNDATION ENERGY MANAGEMENT,LLC
Well	STATE 36-3-9
Field	WILCAT
County	WELD State CO

API No.: 05-123-19794-010000 Serv #: 900749448
Location: NE NW
Sec: 36 Twp: 6N Rge: 61W

Other Services
JB,GR -RBT

Permanent Datum	GL	Elevation 4629'		Elevation
Log Measured From	KB , 12.5 Ft. above perm. datum		K.B.	4641.5'
			D.F.	
Drilling Measured From	KB		G.L.	4629'

Date @ Time Logged	23-SEP-2013	Type Fluid in Hole	WATER
Run No.	ONE	Density of Fluid	8.4PPG
Depth - Driller	6803 ft	Fluid Level	500 ft
Depth - Logger	6791 ft	Cement Top Est. Logged	N/A
Bottom - Logged Interval	6782 ft	Equipment / Location	11808537 / RS
Top - Log Interval	5782 ft	Recorded by	PEDRO GONZALEZ BAQUEIRO
Max. Recorded Temp.	n/a	Witnessed by	JACK RICH

CEMENTING DATA	Surface String	Protection String	Production String	Liner
Date / Time Cemented				
Primary / Squeeze				
Expected Compressive Strength	psi@ hrs	psi@ hrs	psi@ hrs	psi@ hrs
Cement Volume				
Cement Type / Weight	/	/	/	/
Formulation				
Mud Type / Mud Wgt.	/	/	/	/

Borehole Record				Casing & Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
				8.625"	24#	SURFACE	327'
				5.5"	15.5#	SURFACE	6803'

<<< Fold Here >>>

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.

Comments

HES RESERVOIR MONITOR LOG CORRELATED BY HES RADIAL CEMENT BOND LOG DATED S
LOGGED INTERVALS PER CUSTOMER REQUEST
RMTi WAS LOGGED IN SIGMA MODE

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES ROCK SPRING WY

Service Ticket No.	900749448	API No.	05-123-19794-010000	PGM Ver	WARRIOR R5

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

RESERVOIR MONITOR TOOL		TELEMETY					
Run No.	ONE	Run No.	ONE	Run No.		Run No.	
Serial No.	11917921	Serial No.	10001295	Serial No.		Serial No.	
Model No.	RMT-i	Model No.	TTTCU-002	Model No.		Model No.	
Diameter	2.125"	Diameter	1.69"	Diameter		Diameter	

LOGGING DATA

General Data

Pass	Depths		Well Head	Speed	Logging Run Comments
No.	From	To	Pressure	Ft/Min	
REPEAT	6000	5800	0	15	
MAIN	6782	5782		15	

	GAMMA RAY		SGIN		RNF			
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
	0	150	45	0	0	1.2		

DIRECTIONAL INFORMATION

Maximum Deviation		deg. @		KOP	

Foundation Energy Management, LLC

WELLBORE DIAGRAM

Well / Battery	Prospect Name		Total Depth	Current Status
State 36-3-9	DOC III/V		6803'	SI
Location	**Sec-Twn-Rng**		**Producing Horizon**	**County & State**
NE NW	36-6N-61W		N/A	Weld, CO

WELLBORE DIAGRAM

Prepared Date: 9-1-2013
Prepared By: Matt Stark

General Info

API #: 05-123-19794-01

KB Elevation: 4641.5'
GL Elevation: 4629'

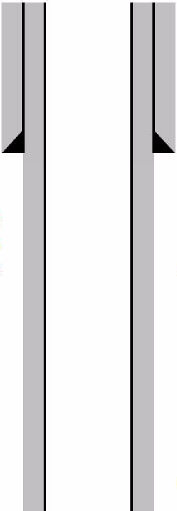
Spud Date: 08-28-2013
Completion Date: N/A

TVD: 6738'
MD: 6803'
Last PBTD: N/A

Stack out at 1627' on second attempt OH logs

Stack out at 1890' on first attempt OH logs

COULD NOT GET OH LOGS TO GO



Surface Casing
8-5/8 inch (OD)
24 # (weight)
J-55 grade
327' depth from KB
Surface cement top Visual Returns
230 sacks of cement

Sidetrack off kickoff plug at 2165'

Production Casing
5-1/2 inch (OD)
15.5 # (weight)
J-55 grade
6798' depth from KB
SURFACE cement top Visual Returns
860 sacks of cement

Niobrara expected at 5976'

Pump Details:

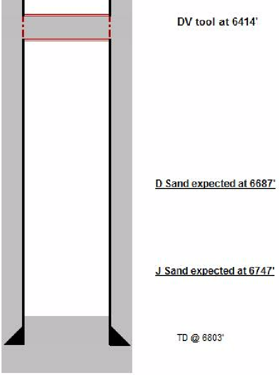
Pumping Unit Details:

Still need info

Well Notes:

DV tool run at 6414'
30 bbls cement recovered after 1 stage cmt
30 bbls cement recovered after 2nd stage cmt
Should be cemented all the way to surface

Float collar at 6755' (ID 4.907")
Float collar should be clear if float shoe held



HALLIBURTON

MAIN PASS

5"=100'

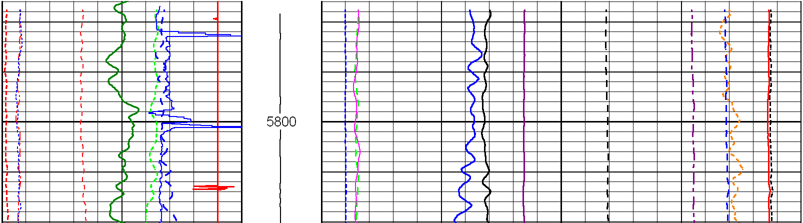
Database File: state 36-3--9_capture.db
Dataset Pathname: WC/ST36-3-9/run1/MAIN
Presentation Format: RMTE_M~1
Dataset Creation: Mon Sep 23 15:34:03 2013 by Log Halliburton Casedho
Charted by: Depth in Feet scaled 1:240

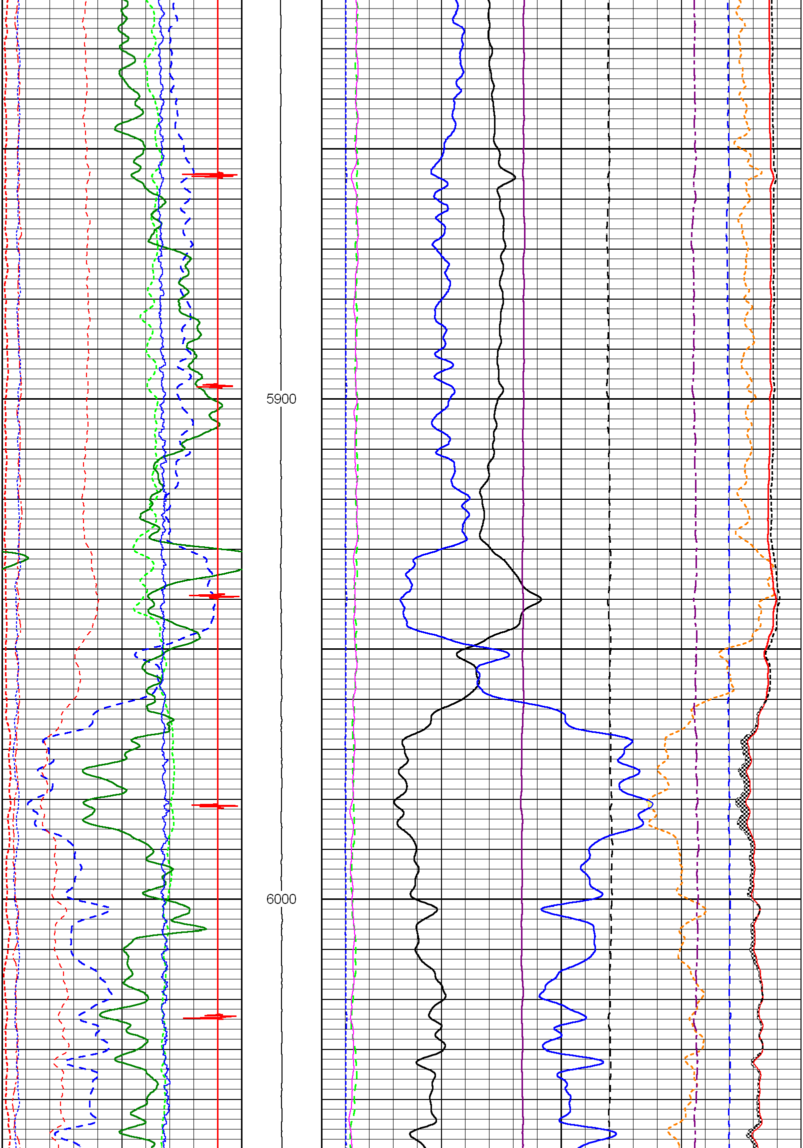
200 Near Bore Si (SGBN) 0
0 OAI 100
10 FAR FIT ERR (SGFF) 40
0 GR (GAPI) 200
0 NEAR FIT ERR (SGFN) 100
-4500 CCL 500
0 IN FIT ERR (CFTR1) NEAR 1
0 IN FIT ERR CFTR2) FAR 1
50 LSPD (ft/min) 0

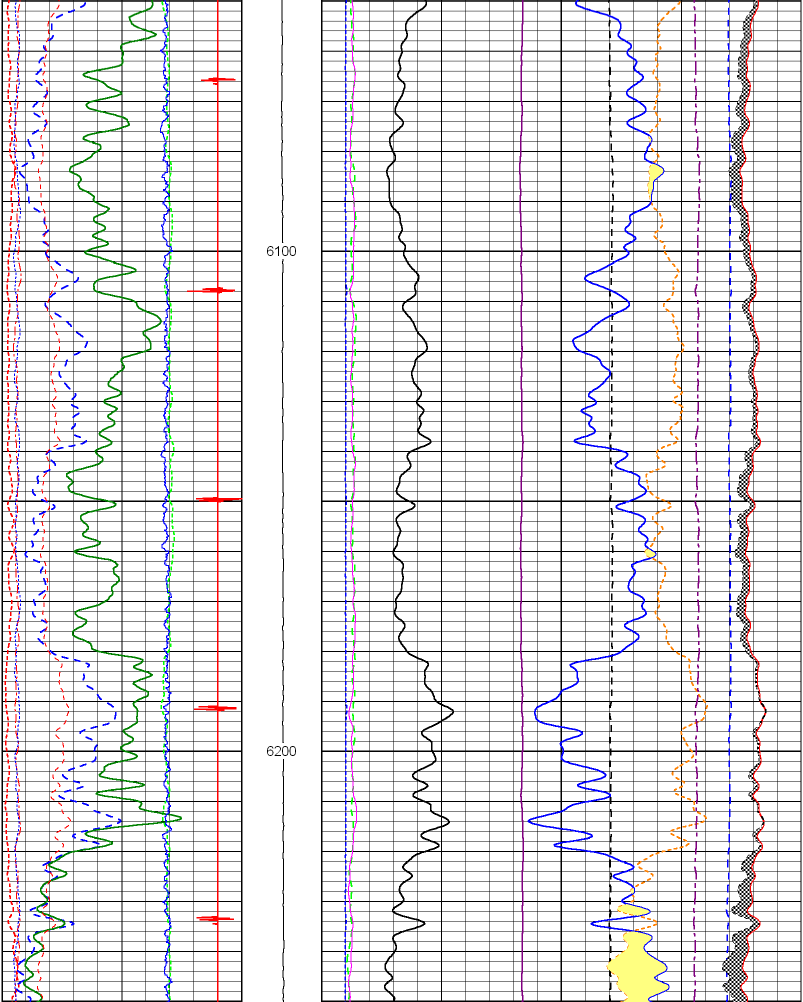
TENSION
0 (lb) 1800

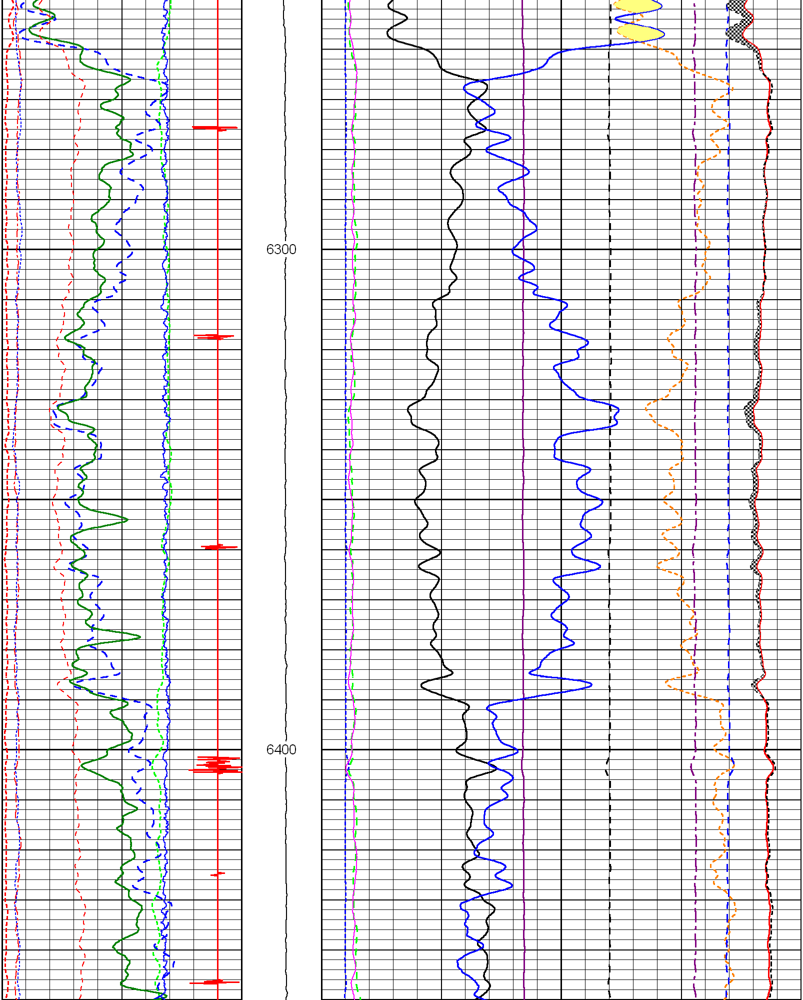
0 RATIO (RNF) 1.2
0 RIN 9
0 RICF 6
0 H YIELD (YH2) 1
0 H YIELD (YH1) 1
45 SGIN 0
INOX2
-1500 1500

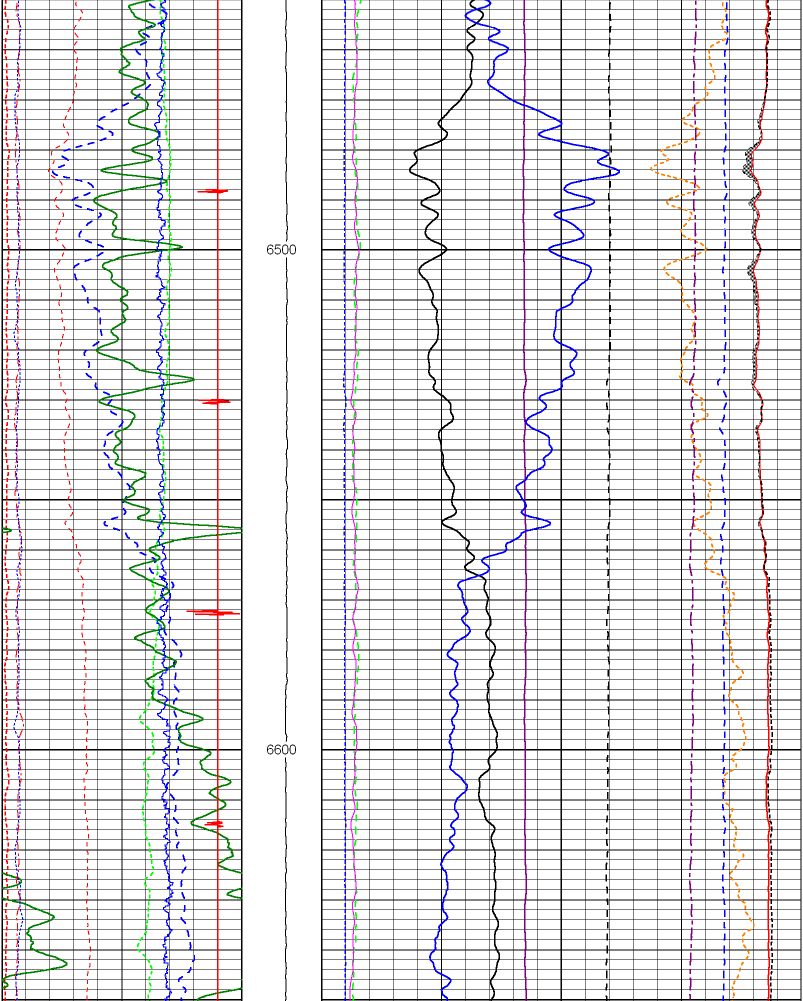
60000 Near Counts (NCAP) 0
60000 Far Counts (FCAP) 0
100000 FAR INTEL CT (FSIN) 0
10000(NEAR INTEL CT (NSIN) 0
ET INL NEAR (NNII
50000 -1000

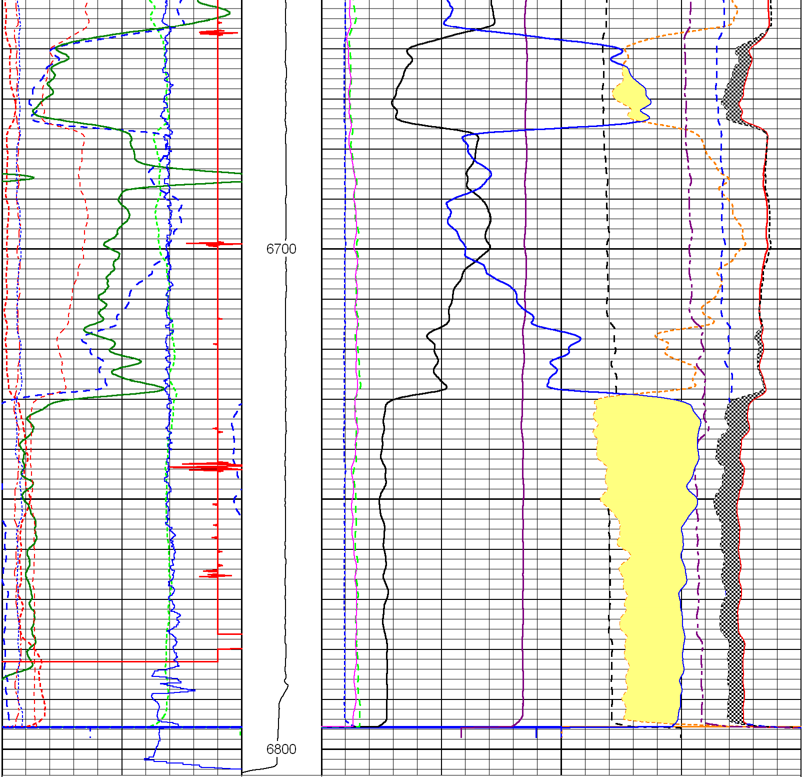












200 Near Bore Si (SGBN) 0
0 OAI 100
10 FAR FIT ERR (SGFF) 40
0 GR (GAPI) 200
0 NEAR FIT ERR (SGFN) 100
-4500 CCL 500
0 IN FIT ERR (CFTR1) NEAR 1
0 IN FIT ERR CFTR2) FAR 1
50 LSPD (ft/min) 0

TENSION
0 (lb 1800

0 RATIO (RNF) 1.2
0 RIN 9
0 RICF 6
0 H YIELD (YH2) 1
0 H YIELD (YH1) 1
45 SGIN 0
INOX2
-1500 1500

60000 Near Counts (NCAP) 0
60000 Far Counts (FCAP) 0
100000 FAR INTEL CT (FSIN) 0
10000(NEAR INTEL CT (NSIN) 0
ET INL NEAR (NNI
50000 -1000

HALLIBURTON

MAIN PASS

5"=100'

HALLIBURTON

REPEAT PASS

5"=100'

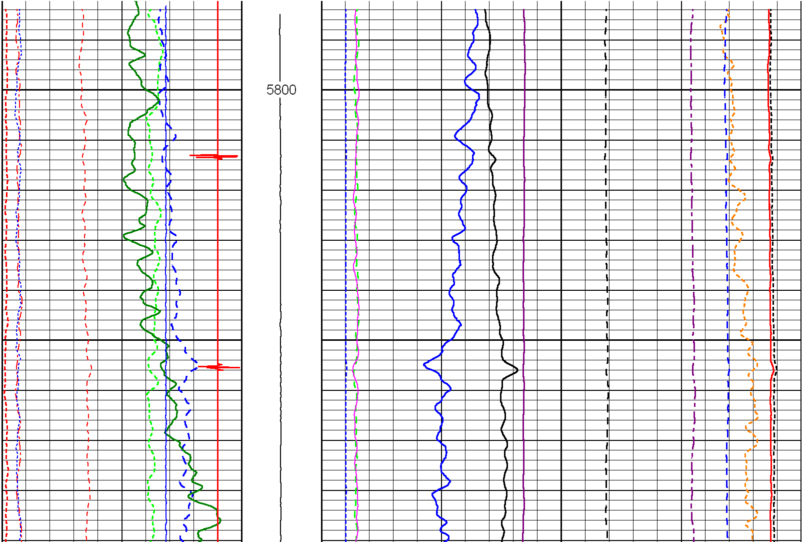
Database File:	state 36-3--9_capture.db
Dataset Pathname:	WC/ST36-3-9/run1/REPEAT
Presentation Format:	RMTE_M~1
Dataset Creation:	Mon Sep 23 16:40:07 2013 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240

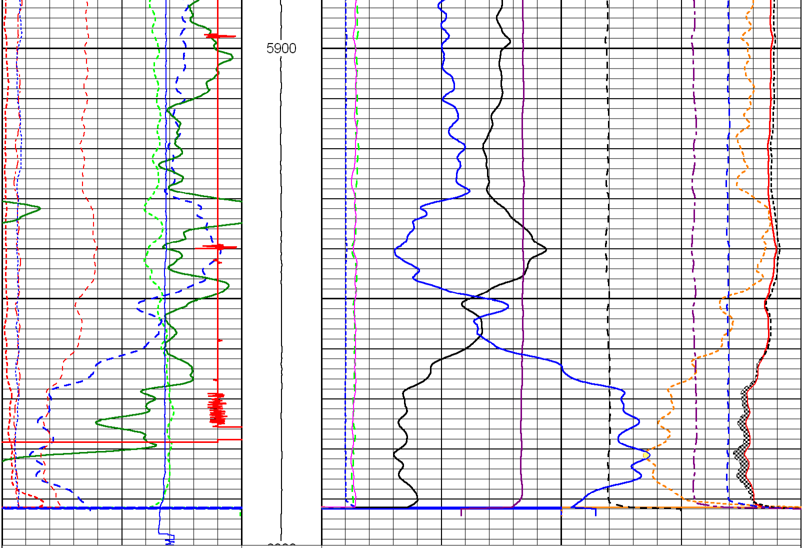
200	Near Bore Si (SGBN)	0
0	OAI	100
10	FAR FIT ERR (SGFF)	40
0	GR (GAPI)	200
0	NEAR FIT ERR (SGFN)	100
-4500	CCL	500
0	IN FIT ERR (CFTR1) NEAR	1
0	IN FIT ERR CFTR2) FAR	1
50	LSPD (ft/min)	0

	TENSION	
0	(lb	1800

0	RATIO (RNF)	1.2
0	RIN	9
0	RICF	6
0	H YIELD (YH2)	1
0	H YIELD (YH1)	1
45	SGIN	0
-1500	INOX2	1500

60000	Near Counts (NCAP)	0
60000	Far Counts (FCAP)	0
100000	FAR INTEL CT (FSIN)	0
100000	NEAR INTEL CT (NSIN)	0
50000	ET INL NEAR (NNII	-1000





200 Near Bore Si (SGBN) 0
0 OAI 100
10 FAR FIT ERR (SGFF) 40
0 GR (GAPI) 200
0 NEAR FIT ERR (SGFN) 100
-4500 CCL 500
0 IN FIT ERR (CFTR1) NEAR 1
0 IN FIT ERR CFTR2) FAR 1
50 LSPD (ft/min) 0

TENSION
0 (lb) 1800

0 RATIO (RNF) 1.2
0 RIN 9
0 RICF 6
0 H YIELD (YH2) 1
0 H YIELD (YH1) 1
45 SGIN 0

60000 Near Counts (NCAP) 0
60000 Far Counts (FCAP) 0
100000 FAR INTEL CT (FSIN) 0
10000(NEAR INTEL CT (NSIN) 0

INOX2
-1500 1500

ET INL NEAR (NNII
50000 -1000

HALLIBURTON

REPEAT PASS

5"=100'

Calibration Report

Database File: state 36-3--9_capture.db
Dataset Pathname: WC/ST36-3-9/run1/MAIN
Dataset Creation: Mon Sep 23 15:34:03 2013 by Log Halliburton Casedho

Reservoir Monitor Tool I Calibration Report

Serial-Model: 11917921-A

Shop Calibration Performed: Sun Aug 18 19:53:10 2013

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	86.00	80.00	6.00	+/-15.00	V
ITCR2	3049	3250	-201	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0266	5.49	<6.00
Fe	206	206 +/-2	0.0965	-----	-----
NGAIN = 0.997	NZOFF = 0.3				

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0351	5.84	<6.50
Fe	209	208 +/-2	0.0922	-----	-----
FGAIN = 0.992	FZOFF = 0.3				

Flask Temperature 68.7 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.44	0.01	+/-0.03	
LIRI2	1.65	1.64	0.01	+/-0.20	
TCCR2	4781	5200	-419	+/-1000	cps
ITCR2	3046	3250	-204	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	86.00	80.00	6.00	+/-15.00	V
FCAP	9558	10000	-442	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.96	0.95	0.01	+/-0.10	
N/F Inel Norm	0.62	0.61	0.01	+/-0.06	
RNF	1.05	1.05	-0.00	+/-0.10	
RINC	1.60	1.65	-0.05	+/-0.15	
SGFN	24.10	24.00	0.10	+/-1.00	cu
SGFF	22.89	22.85	0.04	+/-0.50	cu
FSIN	23096	24000	-904	+/-2000	
FCAP	9719	10000	-281	+/-1000	cps
NFTR	0.84			<5.00	
FFTR	0.92			<5.00	
NBKG	209			<500	cps
FBKG	97			<500	cps
RTN	0.38	0.40	-0.02	+/-0.10	usec
RTF	0.40	0.40	-0.00	+/-0.10	usec

Calibration Software Modules

HRMTI Module	2011.9.6.0
RMTI Module	2011.9.29.1

Log Data Acquisition Software Modules

HRMTI Module	2011.9.6.0
RMTI Module	2011.9.29.1

Gamma Ray Calibration Report

Type / Serial: 002 / 10009185

SHOP CALIBRATION

Sat Aug 03 10:01:25 2013

	Counts/Sec.	Gain	Offset	Jig	Units
Background	20.8				cps
Calibrator	143.3				cps
		1.8203			GAPI/cps

PRIMARY VERIFICATION

Sat Aug 03 10:05:01 2013

	Counts/Sec.	Gain	Offset	Jig	Units
Background	46.8				cps
Calibrator	261.2				cps
Difference				214.4	GAPI

BEFORE SURVEY VERIFICATION

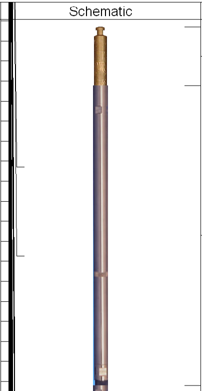
	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

AFTER SURVEY VERIFICATION

	Counts/Sec.	Gain	Offset	Jig	Units
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

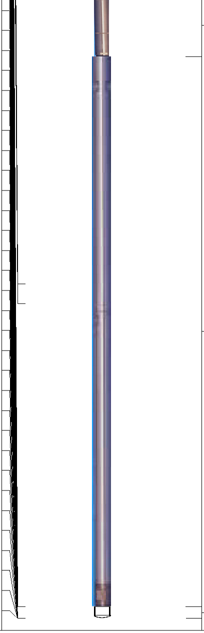
Sensor	Offset (ft)
RmtGenP33V	0.30
RmtGenP5V	0.30
RmtGenClampV	0.30
RmtGenSyncV	0.30
RmtGenLvdsV	0.30
RmtGen15BusV	0.30
RmtGenIonI	0.30
RmtGenContSta	0.30
RmtGenRepSv	0.30
RmtGenRepV	0.30
RmtGenRepPv	0.30
RmtGenIspCmd	0.30
RmtGenIspPv	0.30
RmtGenIspI	0.30
RmtGenCmd	0.30
RmtGenPv	0.30
RmtGenI	0.30
RmtGenP5VI	0.30
RmtGenTemp	0.30

Schematic



Description	Len (ft)	OD (in)	Wt (lb)
STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
TTTCU-002 (10009185) Through Tubing Telemetry Cartridge - Ultrawire	7.66	1.69	37.00

RmtGenP15VI	0.30
RmtGen200V	0.30
RmtGenP33V	0.30
RmtGenP5V	0.30
RmtGenClampV	0.30
RmtGenSyncV	0.30
RmtGenLvdsV	0.30
RmtGen15BusV	0.30
RmtGenIonI	0.30
RmtNDetStat	0.30
RmtNPrgSt1	0.30
RmtNPMI	0.30
RmtNPMHV	0.30
RmtNTemp	0.30
RmtFDetStat	0.30
RmtFPrgSt1	0.30
RmtFPMI	0.30
RmtFPMHV	0.30
RmtFTemp	0.30
LLMTEN	0.00
XHUERR1	0.00
XHUERR2	0.00
XHUTEMP	0.00
XHUSTAT	0.00
XHUCUR1	0.00
XHUCUR2	0.00
XHUCUR3	0.00
XHUCUR4	0.00
TSTAMP	0.00
ITEMPX	0.00
HVOLTX	0.00



XHU-003 (10006565) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RMTI-A (11917921) Halliburton RMTI Tool	14.06	2.13	77.00
BUL-001 (000001) Bullnose	0.30	1.69	1.50

Dataset: state 36-3--9_capture.db: WC/ST36-3-9/run1/MAIN
Total Length: 25.11 ft
Total Weight: 123.50 lb
O.D. 2.13 in

Company	FOUNDATION ENERGY MANAGEMENT,LLC		
Well	STATE 36-3-9		
Field	WILCAT		
County	WELD	State	CO

HALLIBURTON

RESERVOIR MONITOR
TOOL ELITE
RMT i