Company KINDER MORGAN CO2 CO LP
Well COW CANYON CS #1
Field MCELMO DOME
County MONTEZUMA State CO

HALLIBURTON

RESERVOIR
MONITOR TOOL
ELITE

Company	KINDER MORGAN CO2 CO LP
Well	COW CANYON CS #1
Field	MCELMO DOME
County	MONTEZUMA State CO

API No.: 05-083-06709-0000 Serv #: 901221601

Location: SURFACE HOLE LOCATION:
1350' FNL & 210' FWL

LAT: 37.526170
LONG: -108.939440

Sec: 27 Twp: 38N Rge: 19W

Other Services

GAUGE RING
CAST
CBL

Permanent Datum GROUND LEVEL Elevation 6459'
Log Measured From KB , 22.5' Ft. above perm. datum
Drilling Measured From KB

Elevation
K.B. 6481.5'
D.F. 6480.5'
G.L. 6459'

Date @ Time Logged	27 MAR 2014	Type Fluid in Hole	WATER
Run No.	ONE	Density of Fluid	8.4#
Depth - Driller	8306'	Fluid Level	SEE LOG
Depth - Logger	3000'	Cement Top Est. Logged	N/A
Bottom - Logged Interval	3000'	Equipment / Location	11726117 / G.J.
Top - Log Interval	SURFACE	Recorded by	D. SOLIS
Max. Recorded Temp.	N/A	Witnessed by	R. SCOTT

CEMENTING DATA	Surface String	Protection String	Production String	Liner
Date / Time Cemented	N/A	N/A	N/A	N/A
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
ONE	12.25"	SURFACE	3000'	9.625"	36.0#	SURFACE	3000'
TWO	8.75"	3000'	8306'	7.0"	29 & 32#	SURFACE	8306'

<<< 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

CORRELATED TO HALLIBURTON CBL LOG DATED: 27 MAR 2014.

GR-RMT RAN IN COMBINATION.

LOG INTERVALS PER CUSTOMER REQUEST.

THANK YOU FOR HOOSING HALLIBURTON ENERGY SERVICES.

Service Ticket No.	901221601	API No.	05-083-06709-0000	PGM Ver	111027_R5

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

EQUIPMENT DATA

TELEMETRY		RESERBOIR MONITOR TOOL					
Run No.	ONE	Run No.	ONE	Run No.		Run No.	
Serial No.	11510542	Serial No.	11917921	Serial No.		Serial No.	
Model No.	TTTC-U-002	Model No.	RMTI-A	Model No.		Model No.	
Diameter	1.688"	Diameter	2.125"	Diameter		Diameter	

LOGGING DATA

General Data

Pass	Depths		Well Head	Speed	Logging Run Comments
No.	From	To	Pressure	Ft/Min	
ONE	3000'	SURFACE	0	25	MAIN LOG SECTION

	GAMMA RAY		NEAR BORE SI (SGBN)		RATION (RNF)		RICF	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0	200	200	0	7	1	0	18

DIRECTIONAL INFORMATION

Maximum Deviation	N/A	deg. @	N/A	KOP	N/A	

HALLIBURTON

MAIN LOG SECTION

5" = 100'

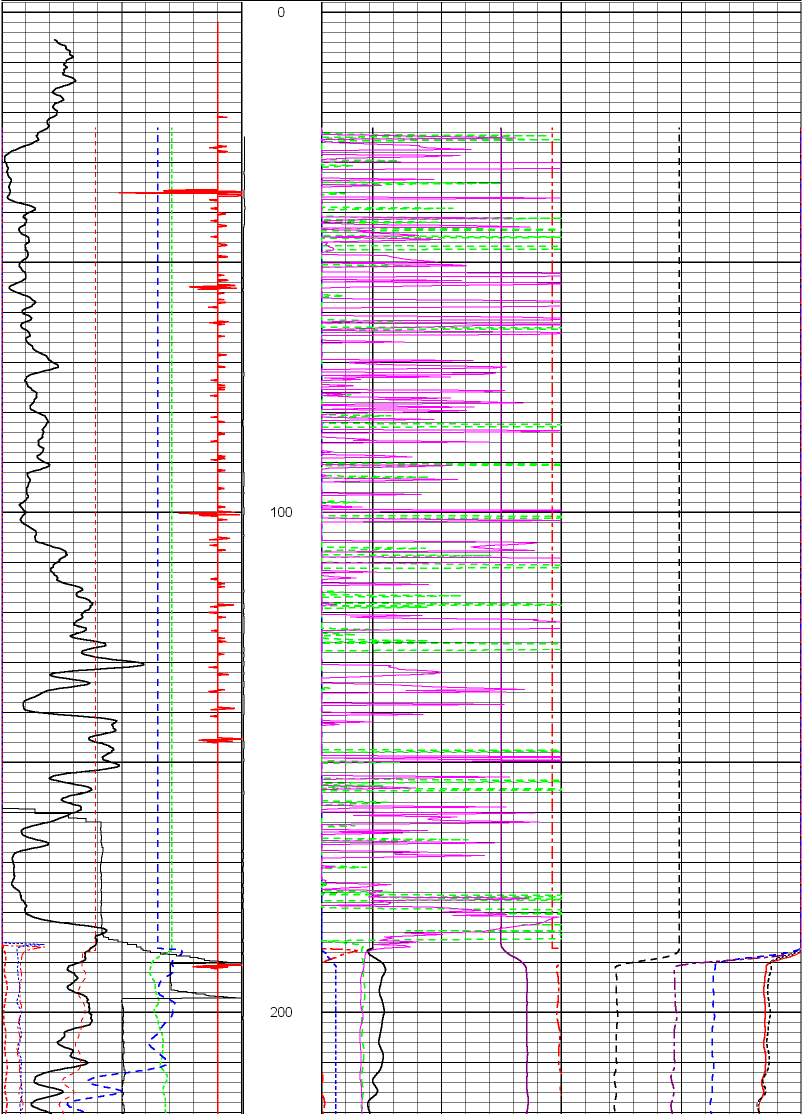
Database File:	cs1_rmt.db
Dataset Pathname:	MAIN1
Presentation Format:	RMTE_M~1
Dataset Creation:	Fri Mar 28 08:44:19 2014 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240

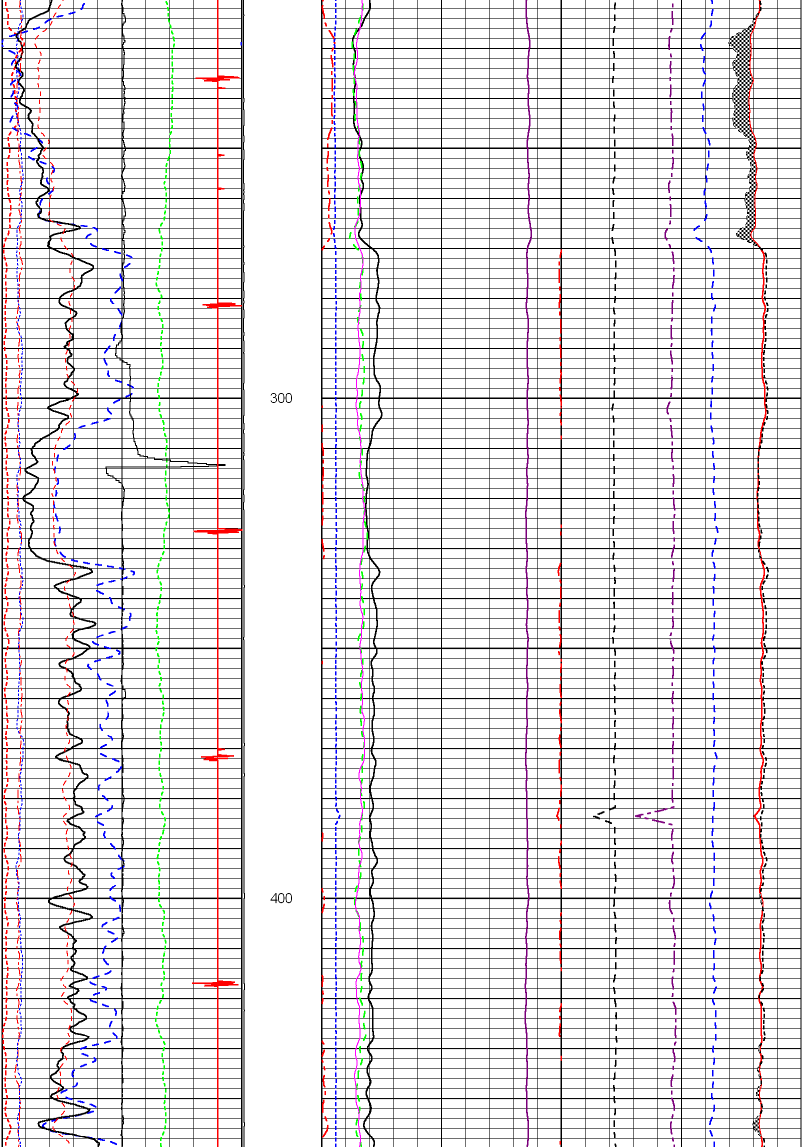
200	Near Bore Si (SGBN)	0
0	OAI	100
10	FAR FIT ERR (SGFF)	40
0	GR (GAPI)	200
50	LSPD (ft/min)	0
0	NEAR FIT ERR (SGFN)	100
-5400	CCL	600
0	IN FIT ERR (CFTR1) NEAR	1
0	IN FIT ERR CFTR2) FAR	1

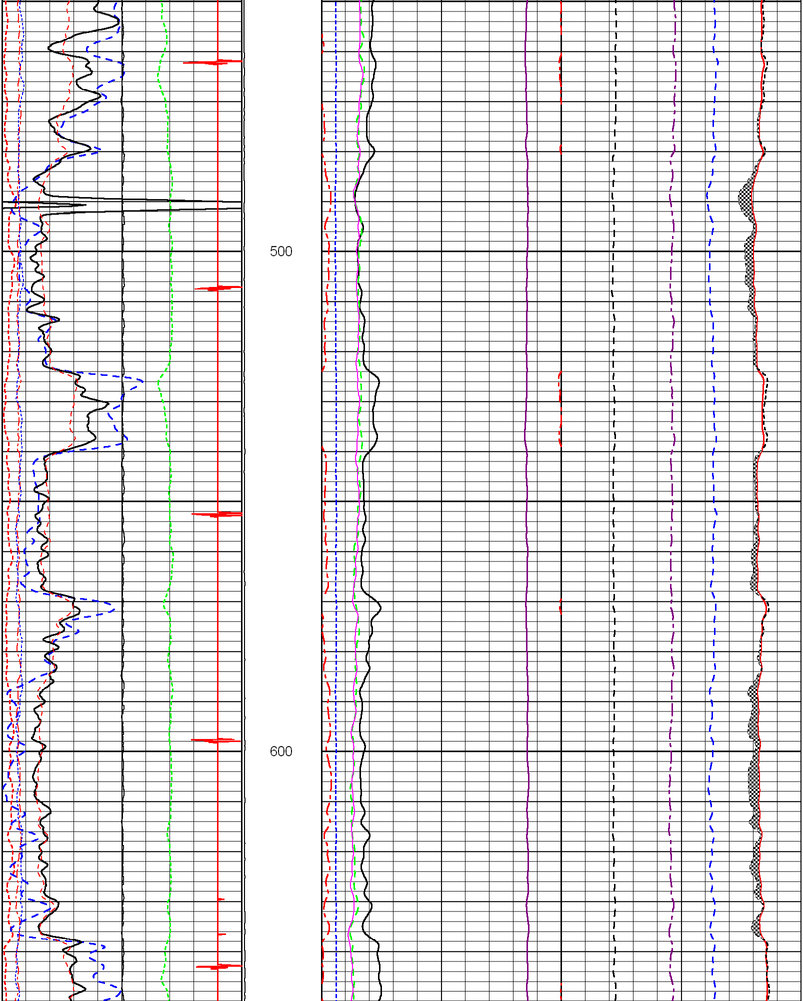
	TENSION	
0	(lb)	3500

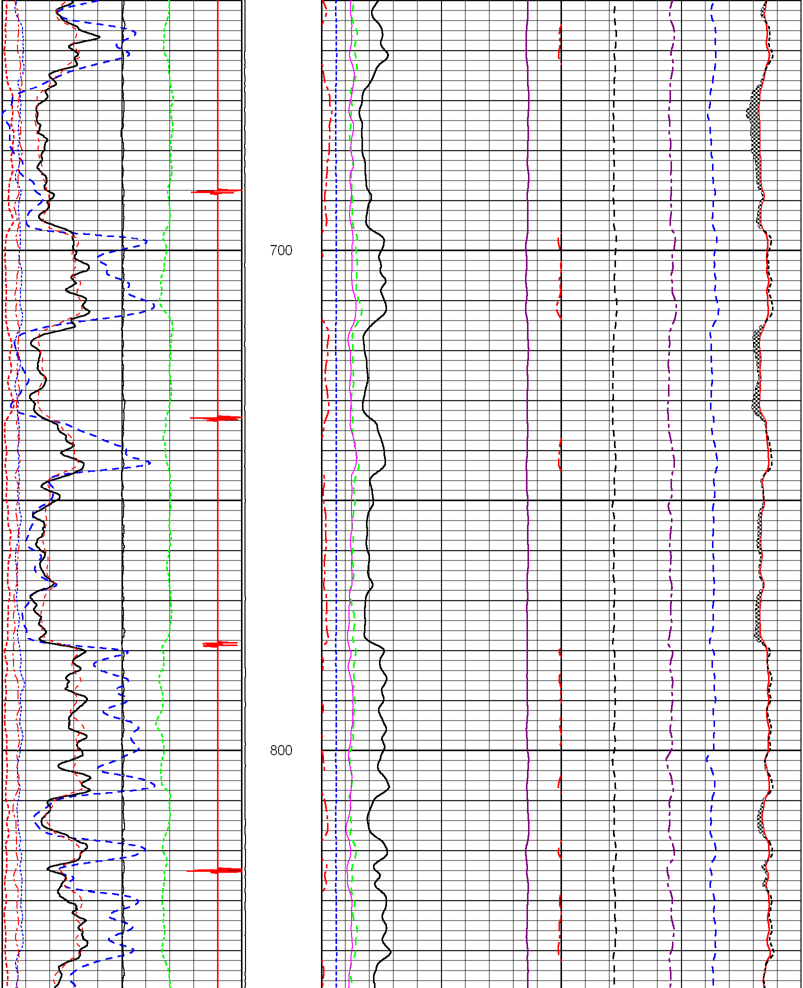
7	RATIO (RNF)	1
0	RIN	15
0	RICF	18
0	H YIELD (YH2)	1
0	H YIELD (YH1)	1
-1500	INOX2	1500

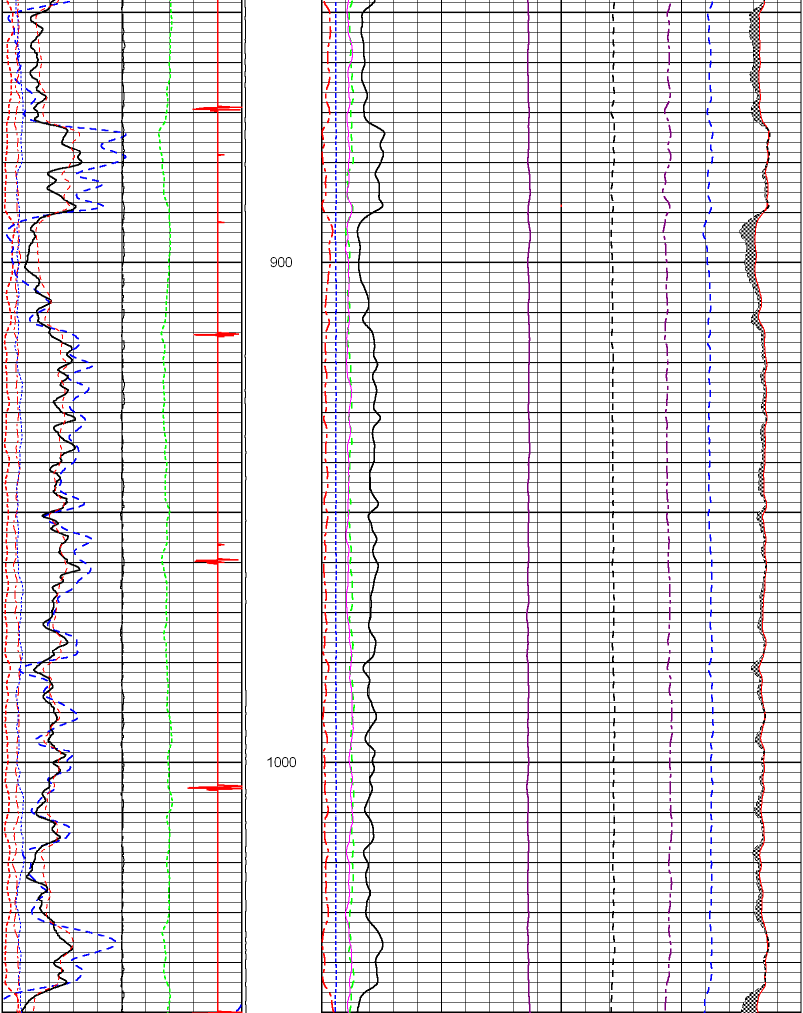
60000	Near Counts (NCAP)	0
60000	Far Counts (FCAP)	0
100000	FAR INTEL CT (FSIN)	0
10000(	NEAR INTEL CT (NSIN)	0
65000	ET INL NEAR (NNII	-1000

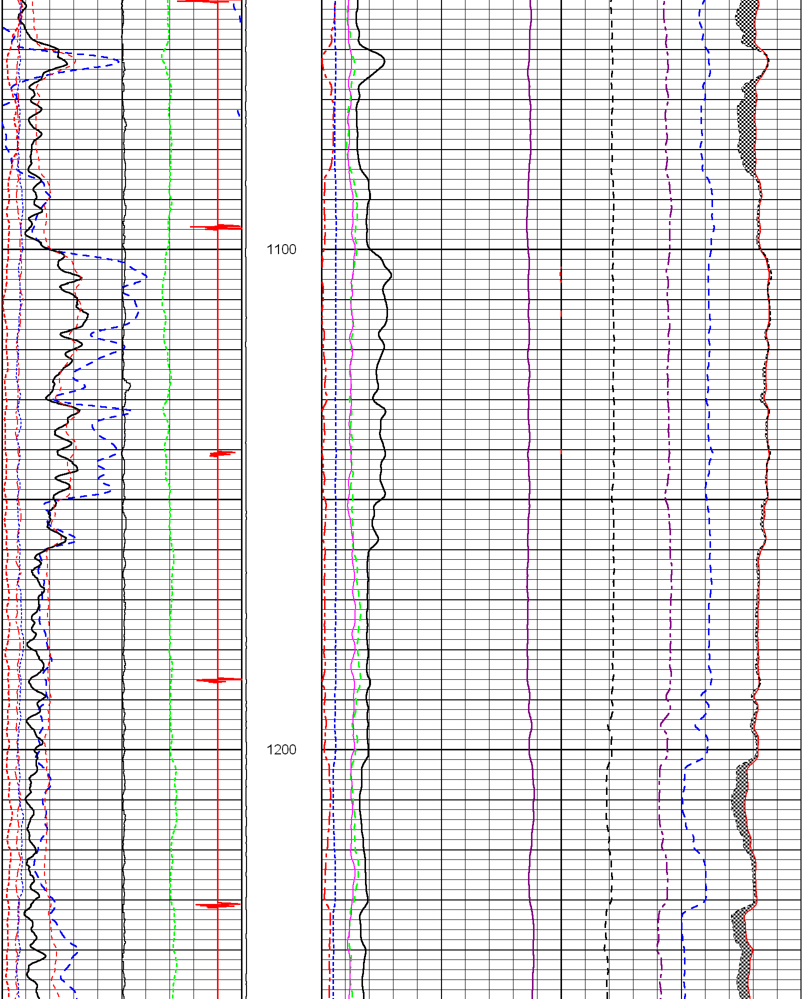


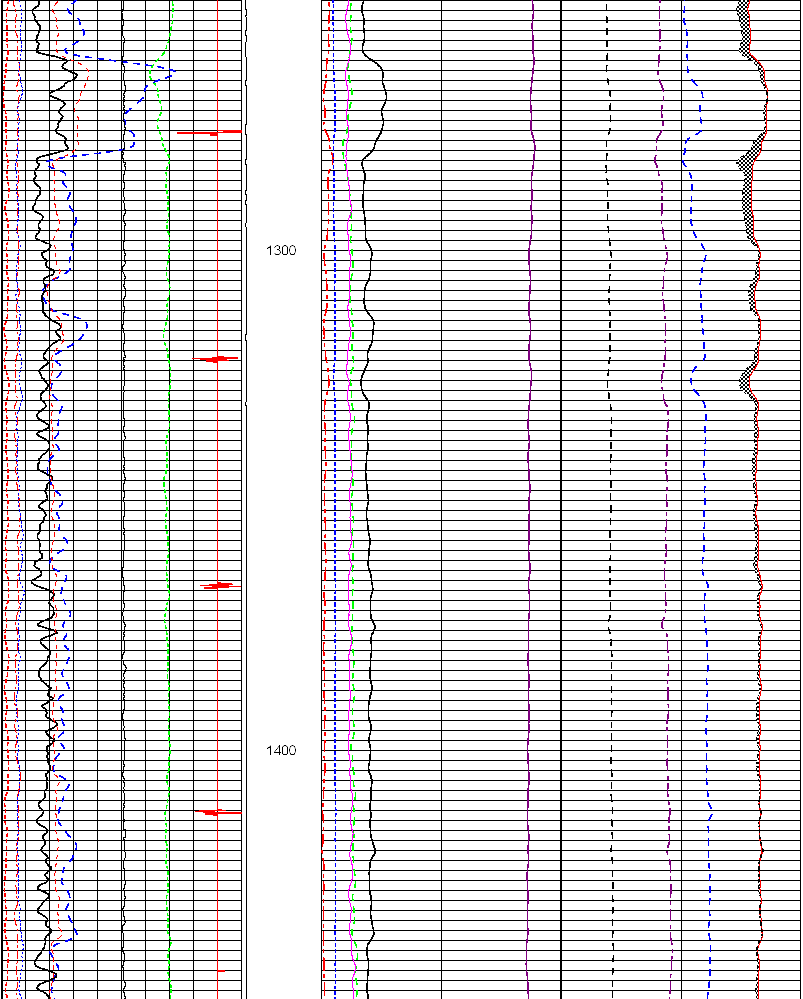


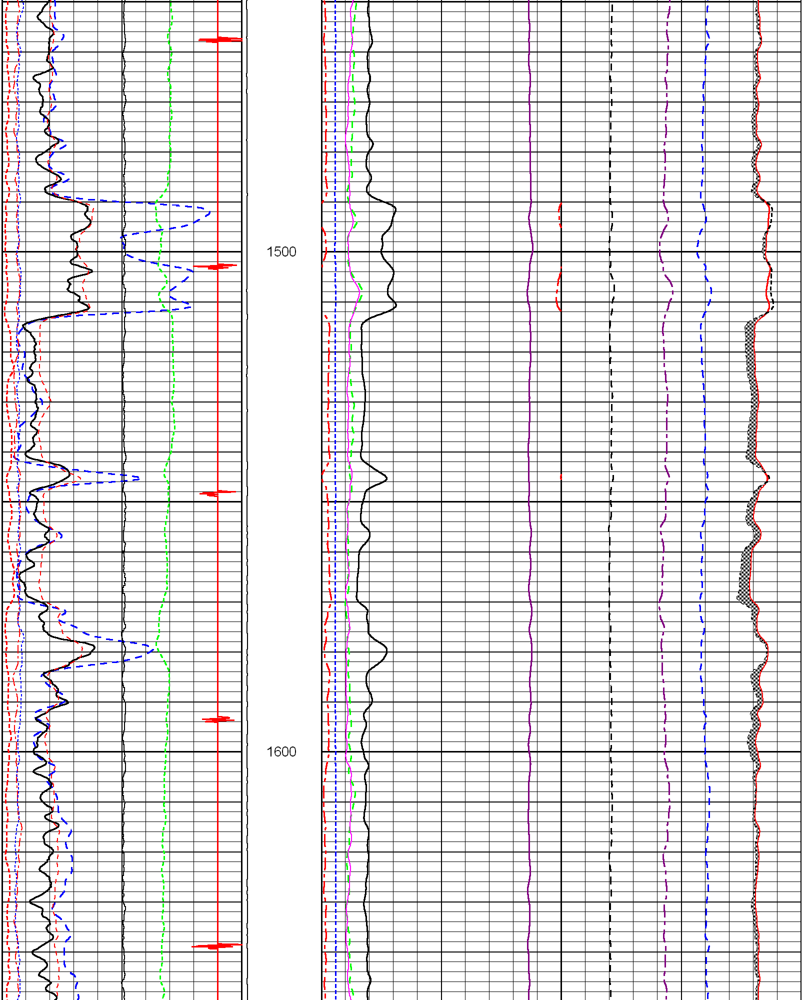


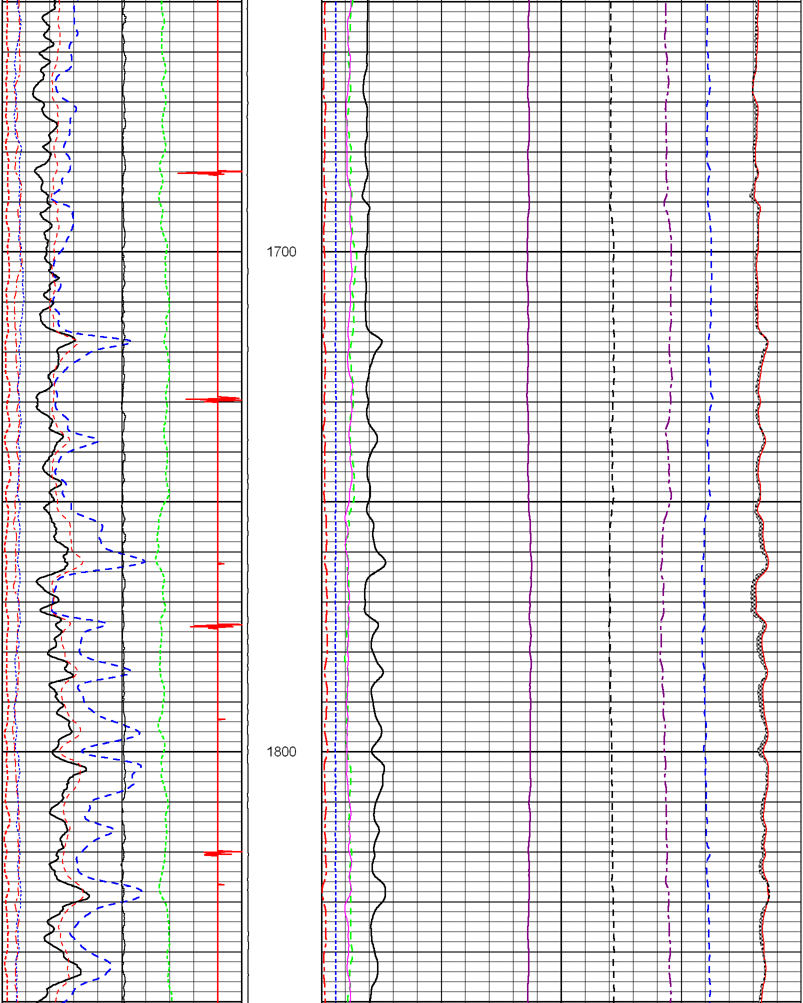


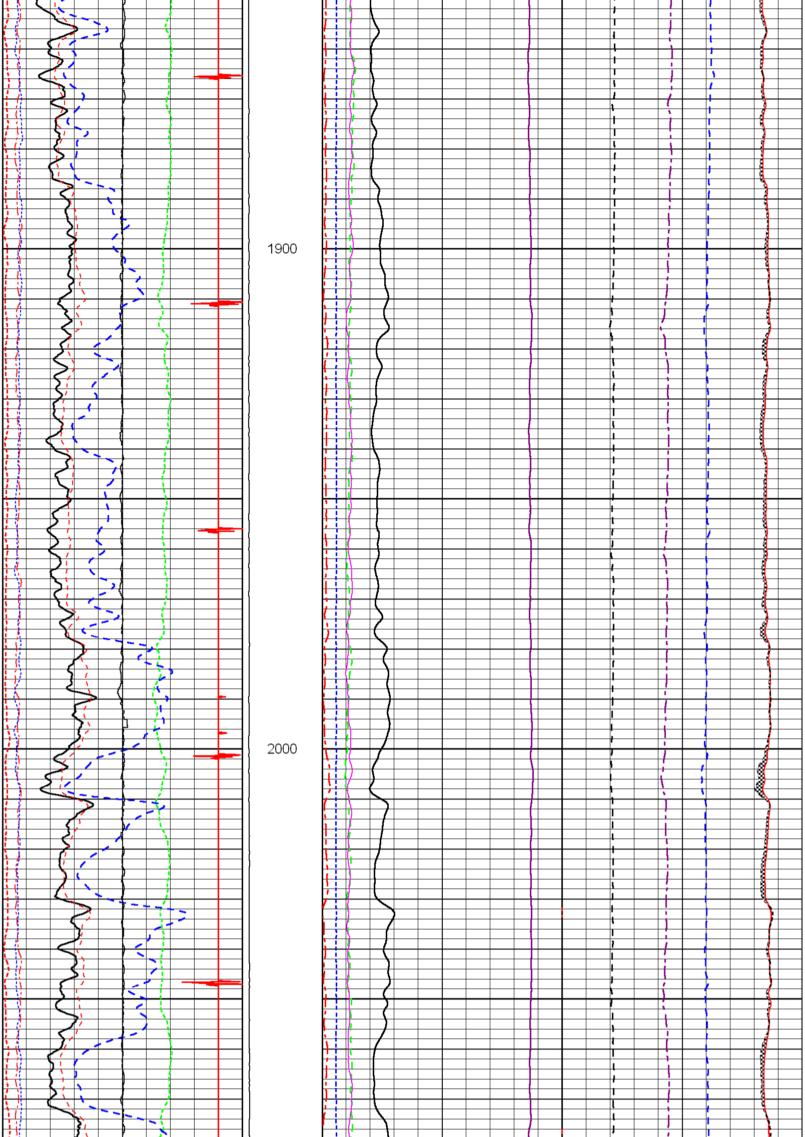


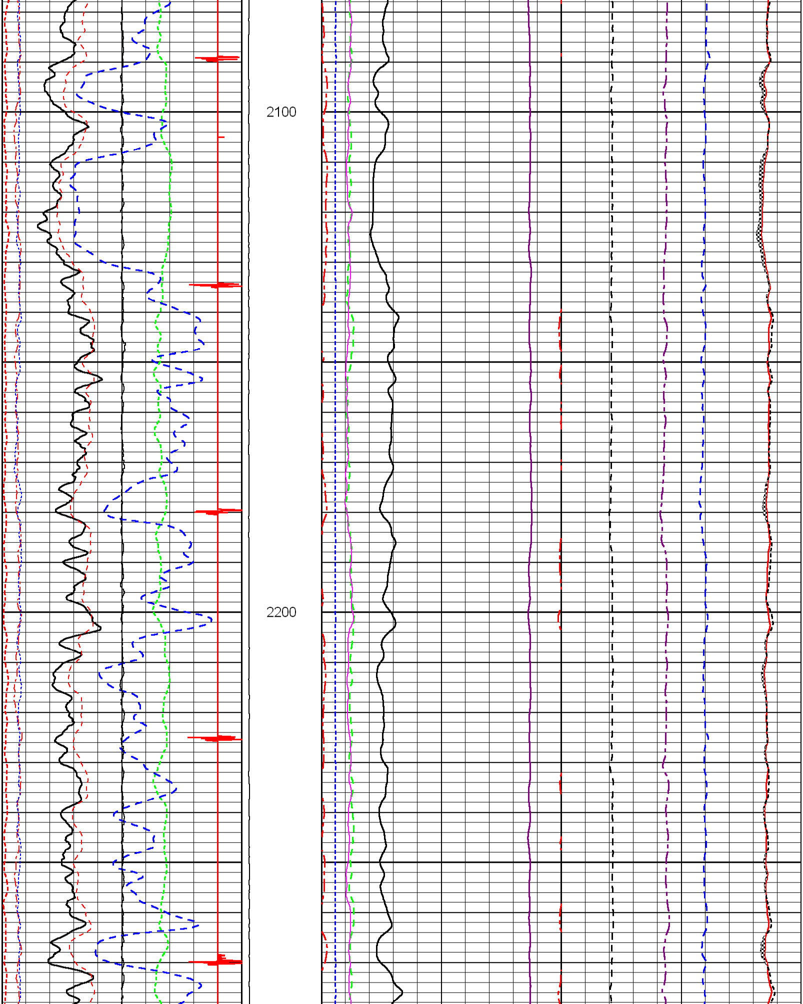


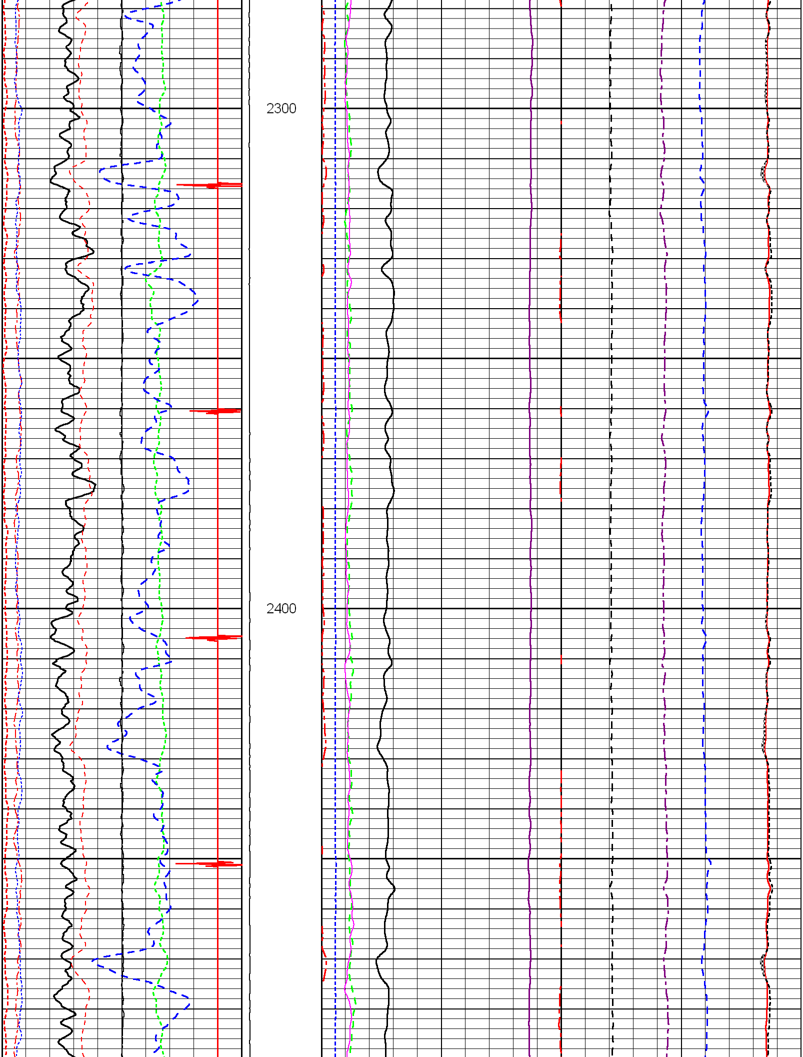


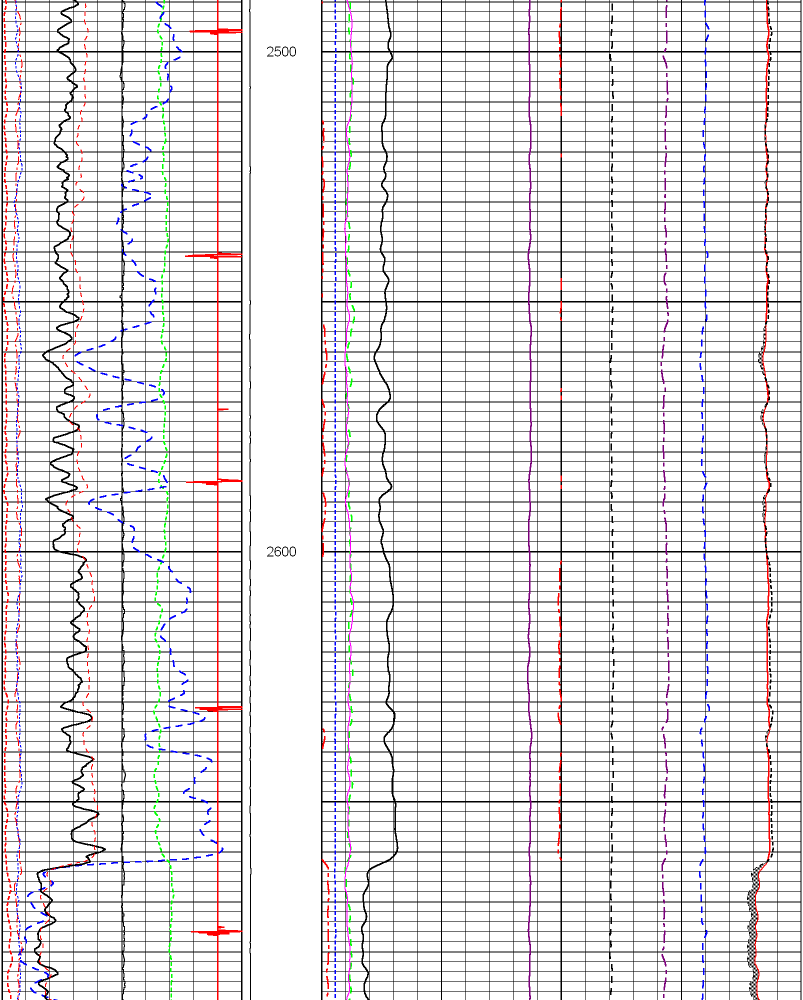


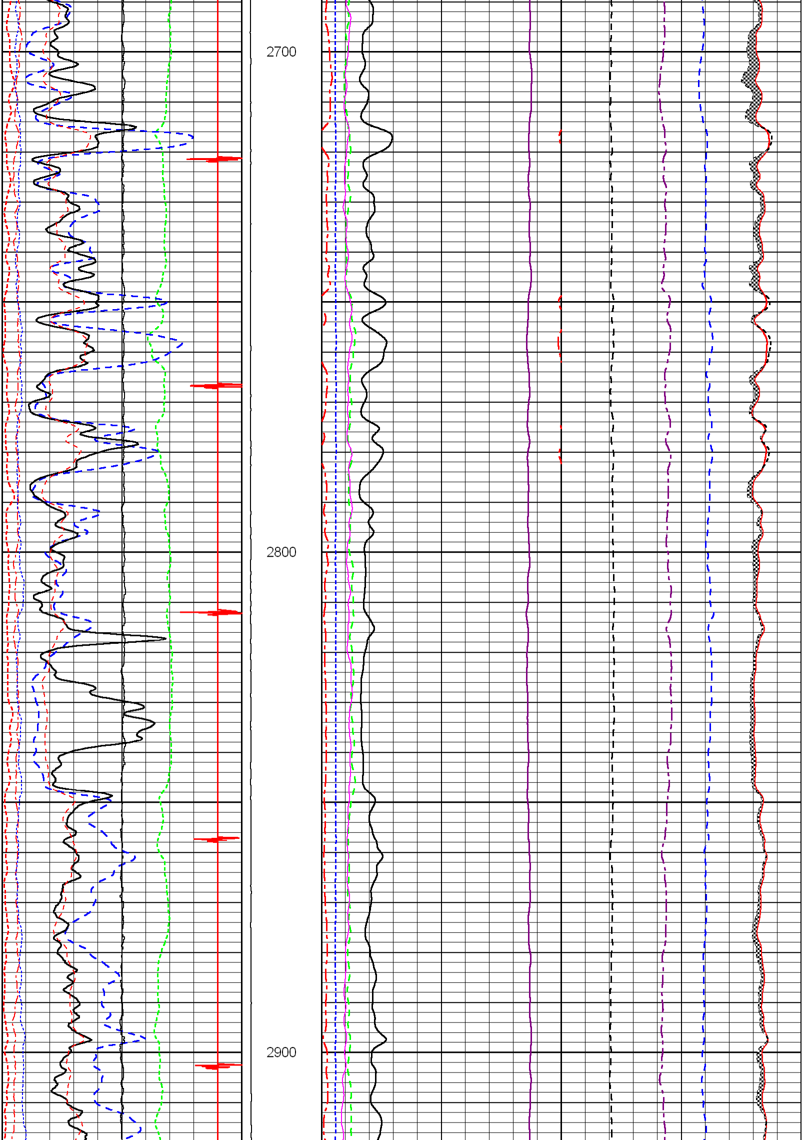


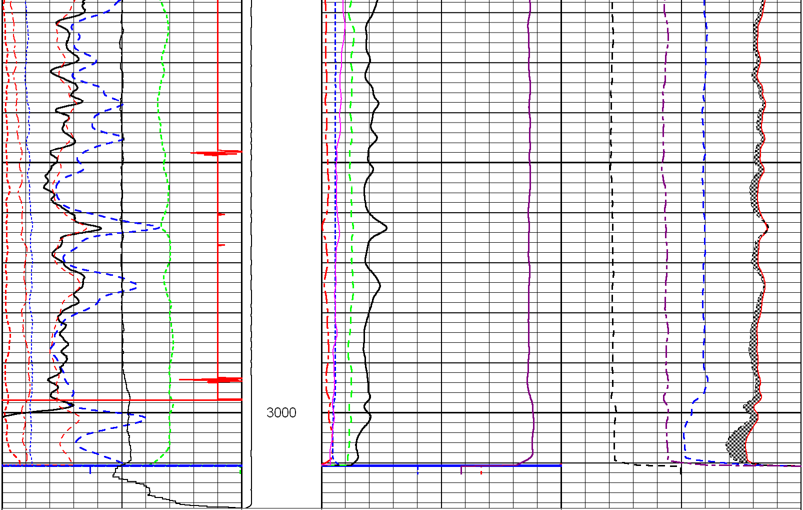












200	Near Bore Si (SGBN)	0
0	OAI	100
10	FAR FIT ERR (SGFF)	40
0	GR (GAPI)	200
50	LSPD (ft/min)	0
0	NEAR FIT ERR (SGFN)	100
-5400	CCL	600
0	IN FIT ERR (CFTR1) NEAR	1
0	IN FIT ERR CFTR2) FAR	1

	TENSION	
0	(lb'	3500

7	RATIO (RNF)	1
0	RIN	15
0	RICF	18
0	H YIELD (YH2)	1
0	H YIELD (YH1)	1
	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	
65000		-1000

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MAIN LOG SECTION

5" = 100'

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REPEAT LOG SECTION

5" = 100'

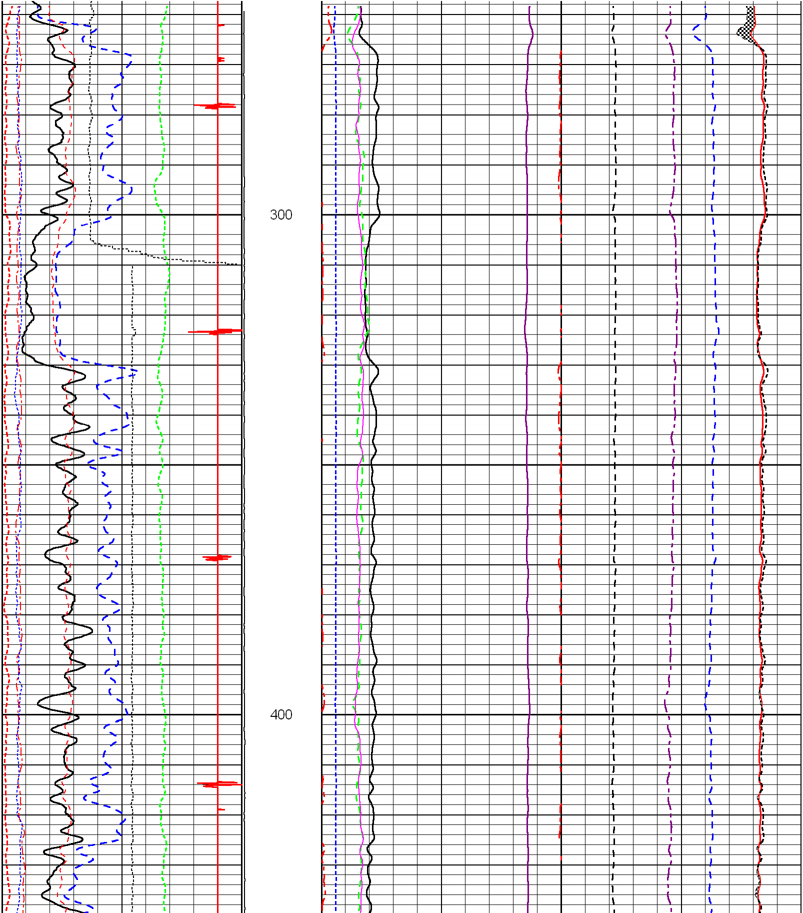
Database File:	cs1_rmt.db
Dataset Pathname:	RMTRPT1
Presentation Format:	rmte_main
Dataset Creation:	Fri Mar 28 08:12:17 2014 by Log Halliburton Casedho
Charted by:	Depth in Feet scaled 1:240

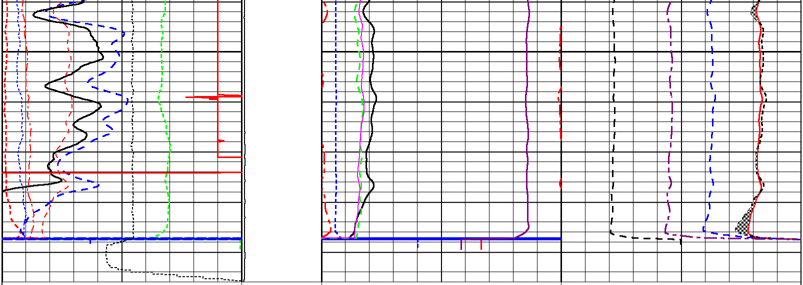
200 Near Bore Si (SGBN) 0
0 OAI 100
10 FAR FIT ERR (SGFF) 40
0 GR (GAPI) 200
0 NEAR FIT ERR (SGFN) 100
-5400 CCL 600
0 IN FIT ERR (CFTR1) NEAR 1
0 IN FIT ERR CFTR2) FAR 1
50 LSPD (ft/min) 0

TENSION
0 (lb) 3500

7 RATIO (RNF) 1
0 RIN 15
0 RICF 18
0 H YIELD (YH2) 1
0 H YIELD (YH1) 1
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
65000 -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
-5400	CCL	600
0	IN FIT ERR (CFTR1) NEAR	1
0	IN FIT ERR CFTR2) FAR	1
50	LSPD (ft/min)	0

	TENSION	
0	(lb)	3500

7	RATIO (RNF)	1
0	RIN	15
0	RICF	18
0	H YIELD (YH2)	1
0	H YIELD (YH1)	1
	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	
65000		-1000

HALLIBURTON

REPEAT LOG SECTION

5" = 100'

Calibration Report

Database File: cs1_rmt.db
Dataset Pathname: MAIN1
Dataset Creation: Fri Mar 28 08:44:19 2014 by Log Halliburton Casedho

Reservoir Monitor Tool I Calibration Report

Serial-Model: 11917921-A

Shop Calibration Performed: Fri Mar 14 09:57:22 2014

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	80.00	80.00	0.00	+/-15.00	V
ITCR2	3456	3250	206	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0263	5.66	<6.00
Fe	207	206 +/-2	0.0959	-----	-----
NGAIN = 0.993	NZOFF = 0.6				

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0353	5.87	<6.50

Fe	211	208 +/-2	0.0904	-----	-----
FGAIN = 0.985	FZOFF = 0.6				

Flask Temperature 56.7 degF

Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.45	0.45	-0.00	+/-0.02	
LIRI2	1.65	1.64	0.01	+/-0.05	
TCCR2	5222	5000	222	+/-1000	cps
ITCR2	3439	3200	239	+/-250	cps

Sigma Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	80.00	80.00	0.00	+/-15.00	V
FCAP	10132	10000	132	+/-500	cps

Horizontal Water Tank

Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.95	0.95	0.00	+/-0.10	
N/F Inel Norm	0.62	0.61	0.01	+/-0.06	
RNF	1.05	1.07	-0.02	+/-0.10	
RINC	1.62	1.64	-0.02	+/-0.15	
SGFN	24.08	24.00	0.08	+/-0.15	cu
SGFF	22.92	22.85	0.07	+/-0.15	cu
FSIN	24422	24000	422	+/-2000	cps
FCAP	10284	10000	284	+/-1000	cps
NFTR	0.87			<5.00	
FFTR	0.90			<5.00	
NBKG	182			<500	cps
FBKG	96			<500	cps
RTN	0.40	0.40	-0.00	+/-0.10	usec
RTF	0.41	0.40	0.01	+/-0.10	usec

Calibration Software Modules

HRMTI Module	2013.3.4.0
RMTI Module	2013.4.19.1

Log Data Acquisition Software Modules

HRMTI Module	2013.3.4.0
RMTI Module	2013.4.19.1

Gamma Ray Calibration Report

Type / Serial: 002 / 11510512

SHOP CALIBRATION Thu Mar 27 13:46:07 2014

	Counts/Sec.	Gain	Offset	Jig	Units
Background	21.6				cps
Calibrator	217.3				cps
		2.2123			GAPI/cps

PRIMARY VERIFICATION Thu Mar 27 13:49:18 2014

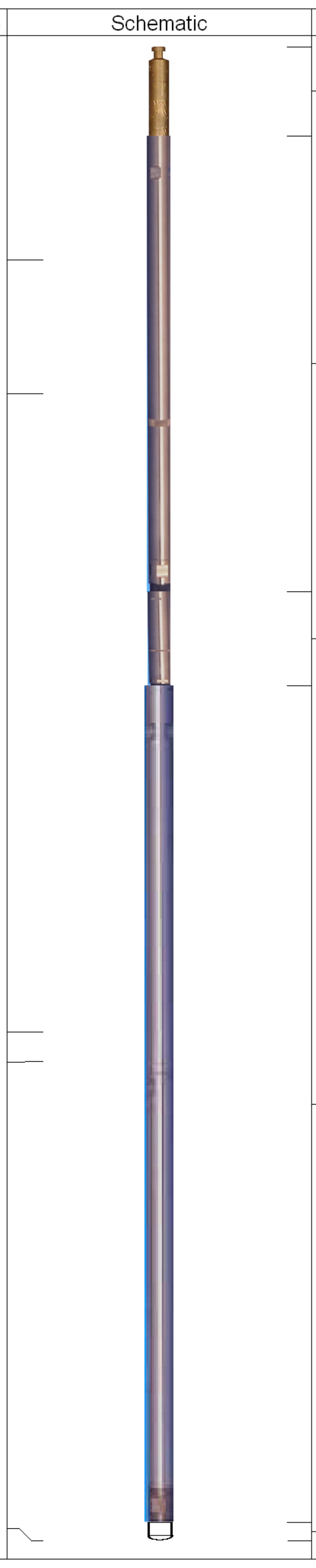
Background	43.0		cps
Calibrator	480.5		cps
Difference		437.4	GAPI

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

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
CCL	21.52					
GR	19.26		TTTCU-002 (11510512) Through Tubing Telemetry Cartridge - Ultrawire	7.66	1.69	37.00
			XHU-003 (12218041) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
RmtTFGT	8.55					
RmtTNGT	8.05					
			RMTI-A (11917921) Halliburton RMTI Tool	14.06	2.13	77.00
LLMTEN	0.00		BUL-001 (000001) Bullnose	0.30	1.69	1.50

Dataset: cs1_rmt.db: field/well/run1/MAIN1
Total Length: 25.10 ft
Total Weight: 123.50 lb
O.D. 2.13 in

Company	KINDER MORGAN CO2 CO LP
Well	COW CANYON CS #1
Field	MCELMO DOME
County	MONTEZUMA
State	CO

HALLIBURTON

RESERVOIR
MONITOR TOOL
ELITE