HALLIBURTON

BOREHOLE VOLUME PLOT

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:
1350' FNL & 210' FWL

LATITUDE: 37.52617
LONGITUDE: -108.93944

Sect. 27 Twp. 38N Rge. 19W

Other Services:
RWCH
ACRT
XRMI
WSTT
DLLT
DSNT/SDLT
ACRT

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

Date		06-Mar-14					
Run No.		ONE					
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	Viscosity	8.6 ppg	29.00 s/qt				
PH	Fluid Loss	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	Rmc	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	Location	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

Date	Sample No.						
Depth-Driller							
Type Fluid in Hole							
Density	Viscosity						
Ph	Fluid Loss						
Source of Sample							
Rm @ Meas. Temp		@	@	@	@	@	@
Rmf @ Meas. Temp.		@	@	@	@	@	@
Rmc @ Meas. Temp.		@	@	@	@	@	@
Source Rmf	Rmc						
Rm @ BHT		@	@	@	@	@	@
Rmf @ BHT		@	@	@	@	@	@
Rmc @ BHT		@	@	@	@	@	@

RESISTIVITY SCALE CHANGES

	Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
	ONE	ACRt	N/A	ECCENT	N/A
		I - 11585787			
		S - 11585797			

EQUIPMENT DATA

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

LOGGING DATA

GENERAL				GAMMA		ACOUSTIC			DENSITY			NEUTRON		
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	8659	8303	REC	0 API	150 API				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-BRIDLE-CR-SP-BRIDLE-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

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

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

HALLIBURTON

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	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 /	AFAC	Archie A factor	0.6200	

	CrossPlot	APAC	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	0.250	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	CSNG	CGOK	Process CSNG Data?	Yes	
	CSNG	CENT	Is Tool Centralized?	No	
	CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
	CSNG	BARF	Barite Correction Factor	1.00	
	CSNG	ORDG	Use Fixed Gain	No	
	CSNG	ORDO	Use Fixed Offset	No	
	CSNG	ORDR	Use Fixed Resolution Degradation Factor	No	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DNSO	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
	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	Eccentered	
	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	
	ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm

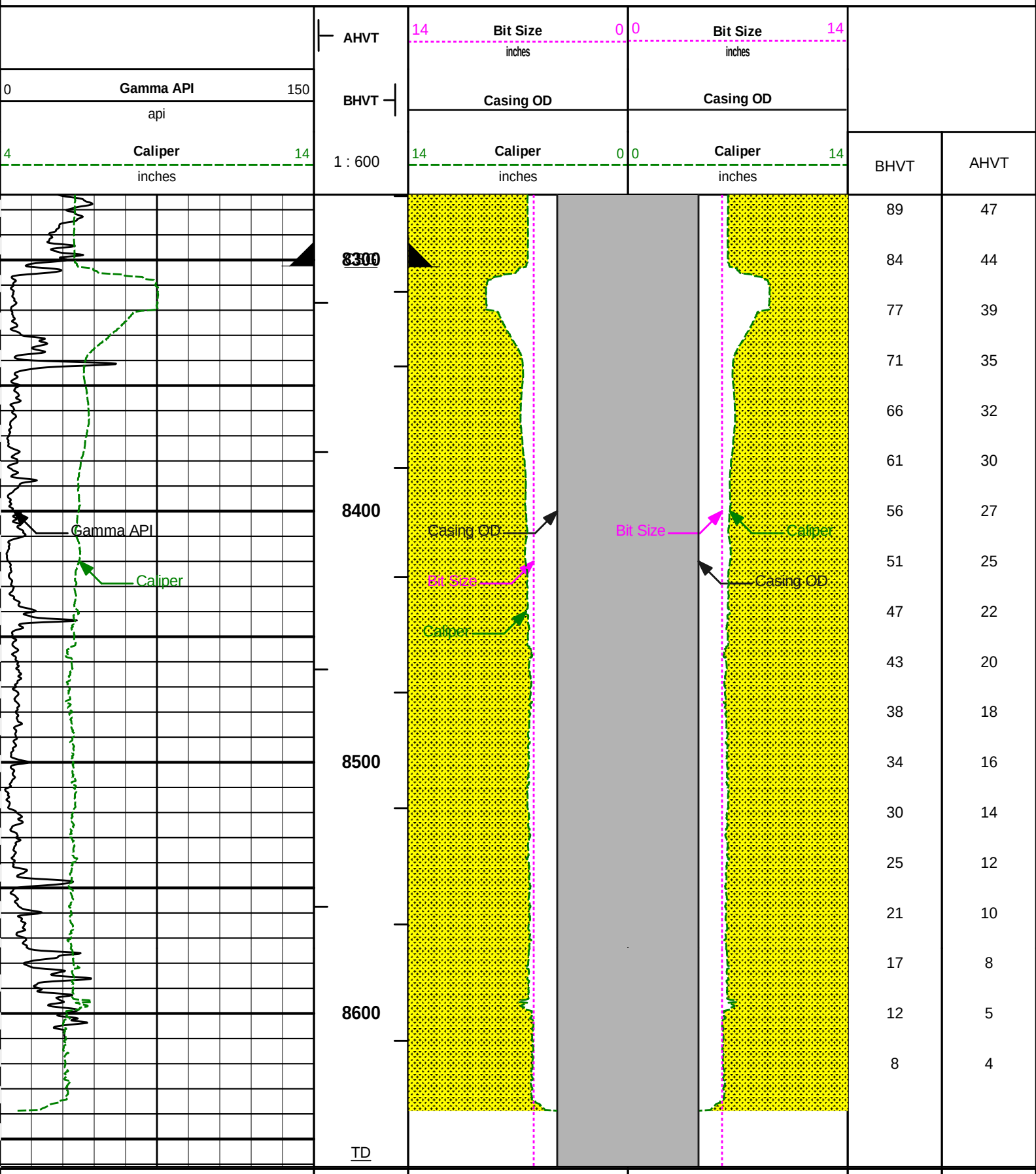
BOTTOM

HALLIBURTON

Plot Time: 06-Mar-14 18:34:20
Plot Range: 8274 ft to 8661.17 ft
Data: KIND_MOR_CS_1\Well Based\MAIN*
Plot File: \\BHV\IQ_BHV_SDL_RM

AHV CALCULATED USING 4.5" CASING

AHV CALCULATED USING 4.5" CASING



HALLIBURTON

Plot Time: 06-Mar-14 18:34:22
Plot Range: 8274 ft to 8661.17 ft
Data: KIND_MOR_CS_1\Well Based\MAIN*
Plot File: \\BHV\IQ_BHV_SDL_RM

AHV CALCULATED USING 4.5" CASING

HALLIBURTON

CUSTOMER EVENT LOG

Event Type	Time & Date	Depth (ft)	Event Description
	06-Mar-14 12:10:55	1963.50	Logging 001 06-Mar-14 12:10 Dn @1963.5f
	06-Mar-14 12:18:56	3795.18	Halting 001 06-Mar-14 12:10 Dn @1963.5f
	06-Mar-14 12:19:25	3834.50	Logging 002 06-Mar-14 12:19 Dn @3834.5f
	06-Mar-14 12:40:00	8200.54	Halting 002 06-Mar-14 12:19 Dn @3834.5f
	06-Mar-14 12:40:13	8200.75	Logging 003 06-Mar-14 12:40 Up @8200.8f
	06-Mar-14 12:40:36	8198.22	Halting 003 06-Mar-14 12:40 Up @8200.8f
	06-Mar-14 12:40:56	8195.75	Logging 004 06-Mar-14 12:40 Up @8195.8f
	06-Mar-14 12:46:08	7968.00	Halting 004 06-Mar-14 12:40 Up @8195.8f
	06-Mar-14 12:47:42	7994.00	Logging 005 06-Mar-14 12:47 Dn @7994.0f
	06-Mar-14 12:53:28	8646.56	Halting 005 06-Mar-14 12:47 Dn @7994.0f
	06-Mar-14 12:53:49	8664.00	Logging 006 06-Mar-14 12:53 Up @8664.0f
	06-Mar-14 13:21:24	8261.47	Halting 006 06-Mar-14 12:53 Up @8664.0f
	06-Mar-14 13:25:24	8662.50	Logging 007 06-Mar-14 13:25 Up @8662.5f
	06-Mar-14 13:54:15	8047.54	Halting 007 06-Mar-14 13:25 Up @8662.5f

Data: KIND_MOR_CS_1\0001 TRIPLE_CSNG\HW11574 Date: 06-Mar-14 14:19:29

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

HALLIBURTON

BOREHOLE VOLUME PLOT