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Cimarex Energy Co.

Eddy County (NM83E)

Sec 10 - T71S - R30E

Hydrus 10 Fed #9

Wellbore #1

Survey: MWD Survey

Standard Survey Report

03 December, 2009

Cimarex Energy Co.

Project Eddy County (NM83E)
Site Sec 10 - T71S - R30E
Well Hydrus 10 Fed #9
Wellbore Wellbore #1
Design Plan #1

WELL DETAILS Hydrus 10 Fed #9

+N/-S +E/-W Northing
0 0 0.0 671303.20

Ground Level 0 0
Easting 657713.00
Latitude 32° 50' 41 509 N
Longitude 103° 57' 15 838 W

SHL 1133' FSL / 990' FEL
BHL 990' FSL / 2310' FEL



Azimuths to Grid North
Total Correction 7 78°

Magnetic Field
Strength 49161 1snT
Dip Angle 60 75°
Date 2009/11/19
Model IGRF200510

SECTION DETAILS

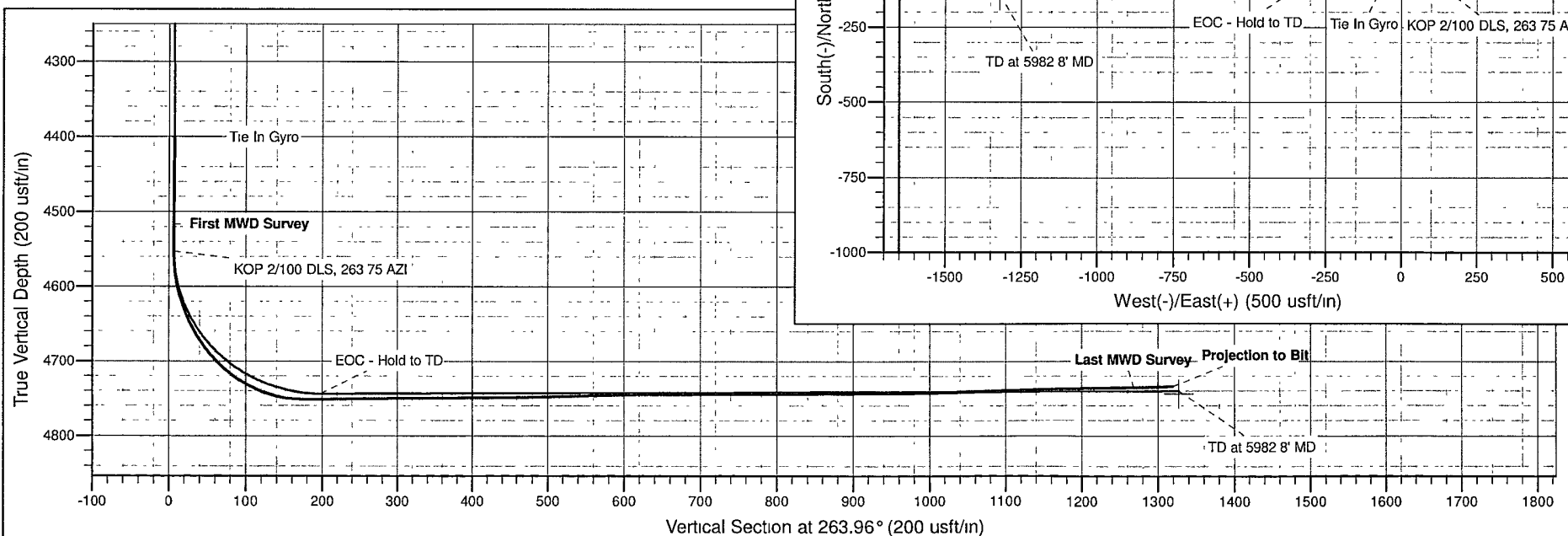
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	4400 0	0.93	3.54	4399.7	-1 5	-7 0	0 00	0 00	7.2	
2	4553 0	0.93	3.54	4552 7	1 0	-6 9	0 00	0 00	6 8	
3	4853 9	90 20	263.75	4744 0	-16 8	-197 6	30 03	-99 79	198 3	
4	5982.8	90.20	263.75	4740 1	-139 7	-1319.7	0.00	0.00	1327.1	Hydrus #9 PBHL

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
4399.7	4400.0	0.93	3.54	-1 5	-7 0	7.2	0 0	Tie In Gyro
4552.7	4553 0	0.93	3.54	1 0	-6 9	6 8	2 5	KOP 2/100 DLS, 263 75 AZI
4744 0	4853 9	90 20	263 75	-16 8	-197 6	198 3	194 1	EOC - Hold to TD
4740.1	5982 8	90.20	263 75	-139 7	-1319 7	1327.1	1323 0	TD at 5982 8' MD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Hydrus #9 PBHL	4744 0	-144 5	-1319 2	671158 74	656393.77



Great White Directional Services

Survey Report

Company:	Cimarex Energy Co	Local Co-ordinate Reference:	Well Hydrus 10 Fed #9
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 10 - T71S - R30E	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Hydrus 10 Fed #9	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project:	Eddy County (NM83E)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Sec 10 - T71S - R30E		
Site Position:		Northing:	670,879 30 usft
From:	Map	Easting:	657,054 40 usft
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 50' 37 337 N
		Longitude:	103° 57' 23 575 W
		Grid Convergence:	0 20 °

Well:	Hydrus 10 Fed #9		
Well Position	+N/-S	0 0 usft	Northing: 671,303 20 usft
	+E/-W	0 0 usft	Easting: 657,713 00 usft
Position Uncertainty	0 0 usft	Wellhead Elevation:	usft
		Latitude:	32° 50' 41 509 N
		Longitude:	103° 57' 15 838 W
		Ground Level:	0 0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	2009/11/19	(°) 7 99
			Dip Angle (°) 60 75
			Field Strength (nT) 49,161

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0 0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0 0
			Direction (°) 263.96

Survey Program	Date 2009/12/03		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	4,400 0	Gyro (Wellbore #1)	MWD
4,517 0	5,997 0	MWD Survey (Wellbore #1)	MWD
			Description:
			MWD - Standard
			MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100ft)	(°/100ft)	(°/100ft)	
4,400 0	0 93	3 54	4,399 7	-1.5	-7.0	7.2	0 00	0 00	0 00	
4,517.0	2 00	6.50	4,516 7	1 5	-6.8	6 6	0 92	0.91	2 53	
First MWD Survey										
4,556 0	0 20	232 60	4,555 6	2.1	-6.7	6.5	5 50	-4.62	-343.33	
4,588.0	8 70	260 50	4,587 5	1.7	-9 2	8.9	26 64	26 56	87 19	
4,619 0	17 00	263 70	4,617.7	0.8	-16 0	15 8	26.86	26 77	10 32	
4,651.0	24.70	268.60	4,647 6	0 1	-27 4	27 2	24.65	24.06	15 31	
4,683 0	33 30	266 20	4,675 6	-0 6	-42.8	42.7	27.11	26 88	-7 50	
4,714.0	43.00	273.10	4,699.9	-0.6	-61.9	61.7	34.14	31 29	22 26	
4,746.0	54 30	275.50	4,721 0	1 2	-85 8	85 2	35 75	35 31	7 50	

Great White Directional Services

Survey Report

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Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 10 - T71S - R30E	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Hydrus 10 Fed #9	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000 1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,778.0	65.20	277.50	4,737.1	4.4	-113.3	112.2	34.49	34.06	6.25	
4,809.0	77.40	278.70	4,747.1	8.5	-142.3	140.6	39.52	39.35	3.87	
4,841.0	89.10	278.10	4,750.8	13.2	-173.7	171.3	36.61	36.56	-1.88	
4,871.0	90.90	276.50	4,750.8	17.0	-203.4	200.5	8.03	6.00	-5.33	
4,936.0	90.50	273.40	4,750.0	22.6	-268.2	264.3	4.81	-0.62	-4.77	
5,031.0	90.30	270.00	4,749.4	25.4	-363.1	358.4	3.59	-0.21	-3.58	
5,125.0	90.80	266.60	4,748.4	22.6	-457.0	452.1	3.66	0.53	-3.62	
5,220.0	91.80	265.30	4,746.3	15.9	-551.8	547.0	1.73	1.05	-1.37	
5,315.0	90.40	261.90	4,744.5	5.3	-646.1	642.0	3.87	-1.47	-3.58	
5,409.0	89.90	258.90	4,744.2	-10.4	-738.8	735.8	3.24	-0.53	-3.19	
5,504.0	90.40	257.00	4,744.0	-30.2	-831.7	830.3	2.07	0.53	-2.00	
5,599.0	90.30	256.30	4,743.4	-52.1	-924.2	924.5	0.74	-0.11	-0.74	
5,694.0	91.40	256.20	4,742.0	-74.7	-1,016.4	1,018.6	1.16	1.16	-0.11	
5,788.0	91.80	256.50	4,739.4	-96.9	-1,107.7	1,111.8	0.53	0.43	0.32	
5,883.0	90.80	256.90	4,737.2	-118.7	-1,200.2	1,206.0	1.13	-1.05	0.42	
5,946.0	91.20	256.90	4,736.1	-133.0	-1,261.5	1,268.5	0.63	0.63	0.00	
Last MWD Survey										
5,997.0	91.30	256.90	4,735.0	-144.6	-1,311.2	1,319.1	0.20	0.20	0.00	
Projection to Bit - Hydrus #9 PBHL										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
4,517.0	4,516.7	1.5	-6.8	First MWD Survey	
5,946.0	4,736.1	-133.0	-1,261.5	Last MWD Survey	
5,997.0	4,735.0	-144.6	-1,311.2	Projection to Bit	

Checked By: _____	Approved By: _____	Date: _____
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