

Cimarex Energy Co., Inc.

Lea County (NAD 83)

New Sheriff #10 Fed 1

New Sheriff #10 Fed 1

S-Well #1

SUR: P-10-20s-33e, 330/S & 280/E

BHL: P-10-20s-33e, 705/S & 707/E

API #30-025-38055

Design: S-Well #1

Standard Survey Report

16 November, 2006



Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3595.00ft (Original Well Elev)
Site:	New Sheriff #10 Fed 1	MD Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Design:	S-Well #1	Database:	EDM 2003.14 Server Db

Lea County (NAD 83)			
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site: New Sheriff #10 Fed 1					
Site Position:		Northing:	576,233.90 ft	Latitude:	32° 34' 58.415
From:	Map	Easting:	712,229.50 ft	Longitude:	103° 46' 42.662
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.30 °

Well:	New Sheriff #10 Fed 1					
Well Position	+N/-S	0.00 ft	Northing:	576,233.90 ft	Latitude:	32° 34' 58.415
	+E/-W	0.00 ft	Easting:	712,229.50 ft	Longitude:	103° 46' 42.662
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	0.00 ft

Wellbore:	S-Well #1				
Measure:	Model Name	Sample Date	Declination (°)	DB Angle (°)	True Slant (°)
	IGRF200510	9/12/2006	8.27	60.61	49,304

Design:		S-Well #1			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	7,923.00
Vertical Section:	Depth From (FWD)	NPS	RAW	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	311.50	

Survey Program	Run	Survey Date	Tool Name	Description
100.00	7,923.00	Gyro Survey #1 (OH)	GM	Gyro Multi-Shot
7,979.00	12,074.00	MWD Survey #1 (S-Well #1)	MWD	Standard MWD

Depth (ft)	Interval (ft)	Weight (lb)	Depth (ft)	NPS (ft)	RAW (ft)	Survey (ft)	True (ft)	True (ft)	True (ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.02	234.04	10.00	0.00	0.00	0.00	0.18	0.18	0.00
20.00	0.04	234.04	20.00	0.00	-0.01	0.00	0.18	0.18	0.00
30.00	0.05	234.04	30.00	-0.01	-0.01	0.00	0.18	0.18	0.00
40.00	0.07	234.04	40.00	-0.01	-0.02	0.01	0.18	0.18	0.00
50.00	0.09	234.04	50.00	-0.02	-0.03	0.01	0.18	0.18	0.00
60.00	0.11	234.04	60.00	-0.03	-0.05	0.01	0.18	0.18	0.00
70.00	0.13	234.04	70.00	-0.05	-0.06	0.02	0.18	0.18	0.00
80.00	0.14	234.04	80.00	-0.06	-0.08	0.02	0.18	0.18	0.00
90.00	0.16	234.04	90.00	-0.07	-0.10	0.03	0.18	0.18	0.00
100.00	0.18	234.04	100.00	-0.09	-0.13	0.03	0.18	0.18	0.00
110.00	0.17	237.25	110.00	-0.11	-0.15	0.04	0.17	-0.14	32.10

Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	IVD Reference:	WELL @ 3595.00ft (Original Well Elev)
Site:	New Sheriff #10 Fed 1	MD Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Direction:	S-Well #1	Database:	EDM 2003.14 Server Db

Measured Depth (ft)	Inclination (°)	True Depth (ft)	Vertical Depth (ft)	ΔNS (ft)	ΔEW (ft)	Section (ft)	PER (ft/1000)	GRAB (ft/1000)	Rate (ft/1000)
120.00	0.15	241.04	120.00	-0.12	-0.18	0.05	0.17	-0.13	37.89
130.00	0.14	245.54	130.00	-0.14	-0.20	0.06	0.17	-0.13	44.97
140.00	0.13	250.89	140.00	-0.14	-0.22	0.07	0.17	-0.12	53.49
150.00	0.12	257.23	150.00	-0.15	-0.24	0.08	0.17	-0.10	63.45
160.00	0.11	264.67	160.00	-0.15	-0.26	0.09	0.17	-0.09	74.44
170.00	0.10	273.21	170.00	-0.15	-0.28	0.11	0.17	-0.06	85.36
180.00	0.10	282.64	180.00	-0.15	-0.30	0.12	0.17	-0.04	94.32
190.00	0.10	292.55	190.00	-0.15	-0.31	0.14	0.17	-0.01	99.09
200.00	0.10	302.37	200.00	-0.14	-0.33	0.15	0.17	0.02	98.20
210.00	0.11	299.29	210.00	-0.13	-0.34	0.17	0.16	0.14	-30.84
220.00	0.13	296.90	220.00	-0.12	-0.36	0.19	0.16	0.15	-23.89
230.00	0.14	295.00	230.00	-0.11	-0.38	0.22	0.16	0.15	-18.99
240.00	0.16	293.46	240.00	-0.10	-0.41	0.24	0.16	0.15	-15.43
250.00	0.17	292.18	250.00	-0.09	-0.44	0.27	0.16	0.15	-12.77
260.00	0.19	291.11	260.00	-0.07	-0.46	0.30	0.16	0.15	-10.73
270.00	0.20	290.19	270.00	-0.06	-0.50	0.33	0.16	0.15	-9.13
280.00	0.22	289.41	280.00	-0.05	-0.53	0.37	0.16	0.15	-7.87
290.00	0.23	288.72	290.00	-0.04	-0.57	0.40	0.16	0.15	-6.85
300.00	0.25	288.12	300.00	-0.02	-0.61	0.44	0.16	0.15	-6.01
310.00	0.24	289.76	310.00	-0.01	-0.65	0.48	0.09	-0.05	16.36
320.00	0.24	291.46	320.00	0.01	-0.69	0.52	0.09	-0.05	17.04
330.00	0.24	293.23	330.00	0.02	-0.73	0.56	0.09	-0.05	17.74
340.00	0.23	295.08	340.00	0.04	-0.76	0.60	0.09	-0.04	18.44
350.00	0.23	296.99	350.00	0.06	-0.80	0.64	0.09	-0.04	19.14
360.00	0.22	298.97	360.00	0.07	-0.84	0.67	0.09	-0.04	19.83
370.00	0.22	301.03	370.00	0.09	-0.87	0.71	0.09	-0.04	20.52
380.00	0.22	303.14	380.00	0.11	-0.90	0.75	0.09	-0.03	21.19
390.00	0.21	305.33	390.00	0.13	-0.93	0.79	0.09	-0.03	21.82
400.00	0.21	307.57	400.00	0.16	-0.96	0.82	0.09	-0.03	22.43
410.00	0.19	307.17	410.00	0.18	-0.99	0.86	0.17	-0.17	-4.01
420.00	0.18	306.69	420.00	0.20	-1.02	0.89	0.17	-0.17	-4.80
430.00	0.16	306.11	430.00	0.21	-1.04	0.92	0.17	-0.17	-5.84
440.00	0.14	305.38	440.00	0.23	-1.06	0.95	0.17	-0.17	-7.26
450.00	0.12	304.45	450.00	0.24	-1.08	0.97	0.17	-0.17	-9.27
460.00	0.11	303.23	460.00	0.25	-1.10	0.99	0.17	-0.17	-12.24
470.00	0.09	301.54	470.00	0.26	-1.11	1.01	0.17	-0.17	-16.90
480.00	0.07	299.06	480.00	0.27	-1.12	1.02	0.17	-0.17	-24.78
490.00	0.06	295.10	490.00	0.28	-1.13	1.03	0.17	-0.17	-39.62
500.00	0.04	287.86	500.00	0.28	-1.14	1.04	0.17	-0.16	-72.38
510.00	0.02	300.70	510.00	0.28	-1.14	1.04	0.25	-0.24	128.36
520.00	0.01	71.36	520.00	0.28	-1.14	1.04	0.25	-0.04	1,306.67
530.00	0.04	90.83	530.00	0.28	-1.14	1.04	0.25	0.24	194.69
540.00	0.06	94.53	540.00	0.28	-1.13	1.03	0.25	0.25	37.03
550.00	0.09	96.08	550.00	0.28	-1.12	1.02	0.25	0.25	15.48
560.00	0.11	96.93	560.00	0.28	-1.10	1.01	0.25	0.25	8.49
570.00	0.14	97.47	570.00	0.28	-1.08	0.99	0.25	0.25	5.36
580.00	0.16	97.84	580.00	0.27	-1.06	0.97	0.25	0.25	3.69
590.00	0.19	98.10	590.00	0.27	-1.03	0.95	0.25	0.25	2.69
600.00	0.21	98.31	600.00	0.26	-0.99	0.92	0.25	0.25	2.05
610.00	0.23	90.52	610.00	0.26	-0.95	0.89	0.33	0.15	-77.95
620.00	0.24	83.83	620.00	0.26	-0.91	0.86	0.33	0.19	-66.89
630.00	0.27	78.17	630.00	0.27	-0.87	0.83	0.33	0.22	-56.58
640.00	0.29	73.41	640.00	0.28	-0.82	0.80	0.33	0.24	-47.60
650.00	0.32	69.40	650.00	0.30	-0.77	0.78	0.33	0.26	-40.08

Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	IVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MP Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Section	S-Well #1	Database	EDM 2003.14 Server Db

Station	Interval (ft)	Inclination (°)	True North (ft)	Horizontal (ft)	ΔN (ft)	ΔE (ft)	Vertical (ft)	Depth (ft)	True North (ft)	Horizontal (ft)	Vertical (ft)
660.00	0.34	66.01	660.00	0.32	-0.72	0.75	0.33	0.27	-33.90		
670.00	0.37	63.12	670.00	0.35	-0.66	0.73	0.33	0.28	-28.86		
680.00	0.40	60.65	680.00	0.38	-0.60	0.70	0.33	0.29	-24.75		
690.00	0.43	58.51	690.00	0.42	-0.54	0.68	0.33	0.30	-21.38		
700.00	0.46	56.65	700.00	0.46	-0.48	0.66	0.33	0.30	-18.61		
710.00	0.46	57.36	710.00	0.50	-0.41	0.64	0.07	0.05	7.07		
720.00	0.47	58.05	720.00	0.54	-0.34	0.61	0.07	0.05	6.93		
730.00	0.47	58.73	730.00	0.59	-0.27	0.59	0.07	0.05	6.79		
740.00	0.48	59.39	739.99	0.63	-0.20	0.57	0.07	0.05	6.65		
750.00	0.48	60.05	749.99	0.67	-0.12	0.54	0.07	0.05	6.52		
760.00	0.49	60.69	759.99	0.72	-0.05	0.51	0.07	0.05	6.38		
770.00	0.49	61.31	769.99	0.76	0.02	0.48	0.07	0.05	6.25		
780.00	0.50	61.92	779.99	0.80	0.10	0.45	0.07	0.05	6.12		
790.00	0.50	62.52	789.99	0.84	0.18	0.42	0.07	0.05	6.00		
800.00	0.51	63.11	799.99	0.88	0.26	0.39	0.07	0.05	5.88		
810.00	0.52	63.20	809.99	0.92	0.34	0.36	0.08	0.08	0.88		
820.00	0.53	63.28	819.99	0.96	0.42	0.32	0.08	0.08	0.85		
830.00	0.53	63.37	829.99	1.00	0.50	0.29	0.08	0.08	0.82		
840.00	0.54	63.45	839.99	1.04	0.58	0.25	0.08	0.08	0.80		
850.00	0.55	63.52	849.99	1.09	0.67	0.22	0.08	0.08	0.78		
860.00	0.56	63.60	859.99	1.13	0.76	0.18	0.08	0.08	0.75		
870.00	0.57	63.67	869.99	1.17	0.84	0.14	0.08	0.08	0.73		
880.00	0.57	63.74	879.99	1.22	0.93	0.11	0.08	0.08	0.71		
890.00	0.58	63.81	889.99	1.26	1.02	0.07	0.08	0.08	0.69		
900.00	0.59	63.88	899.99	1.31	1.12	0.03	0.08	0.08	0.67		
910.00	0.58	63.64	909.99	1.35	1.21	-0.01	0.14	-0.14	-2.44		
920.00	0.56	63.38	919.99	1.40	1.30	-0.05	0.14	-0.14	-2.56		
930.00	0.55	63.11	929.99	1.44	1.38	-0.08	0.14	-0.14	-2.69		
940.00	0.53	62.83	939.99	1.48	1.47	-0.12	0.14	-0.14	-2.83		
950.00	0.52	62.53	949.99	1.53	1.55	-0.15	0.14	-0.14	-2.98		
960.00	0.51	62.22	959.99	1.57	1.63	-0.18	0.14	-0.14	-3.15		
970.00	0.49	61.88	969.98	1.61	1.70	-0.21	0.14	-0.14	-3.33		
980.00	0.48	61.53	979.98	1.65	1.78	-0.24	0.14	-0.14	-3.52		
990.00	0.46	61.16	989.98	1.69	1.85	-0.27	0.14	-0.14	-3.73		
1,000.00	0.45	60.76	999.98	1.73	1.92	-0.30	0.14	-0.14	-3.97		
1,010.00	0.44	59.12	1,009.98	1.76	1.99	-0.32	0.14	-0.06	-16.43		
1,020.00	0.44	57.43	1,019.98	1.81	2.05	-0.34	0.14	-0.05	-16.85		
1,030.00	0.43	55.71	1,029.98	1.85	2.12	-0.36	0.14	-0.05	-17.26		
1,040.00	0.43	53.94	1,039.98	1.89	2.18	-0.38	0.14	-0.05	-17.65		
1,050.00	0.42	52.14	1,049.98	1.94	2.24	-0.39	0.14	-0.04	-18.02		
1,060.00	0.42	50.30	1,059.98	1.98	2.30	-0.41	0.14	-0.04	-18.37		
1,070.00	0.42	48.43	1,069.98	2.03	2.35	-0.42	0.14	-0.03	-18.69		
1,080.00	0.41	46.54	1,079.98	2.08	2.41	-0.42	0.14	-0.03	-18.97		
1,090.00	0.41	44.61	1,089.98	2.13	2.46	-0.43	0.14	-0.02	-19.22		
1,100.00	0.41	42.67	1,099.98	2.18	2.51	-0.43	0.14	-0.02	-19.44		
1,110.00	0.40	42.28	1,109.98	2.23	2.55	-0.43	0.13	-0.13	-3.85		
1,120.00	0.38	41.87	1,119.98	2.28	2.60	-0.43	0.13	-0.13	-4.12		
1,130.00	0.37	41.43	1,129.98	2.33	2.64	-0.43	0.13	-0.13	-4.41		
1,140.00	0.36	40.96	1,139.98	2.38	2.69	-0.43	0.13	-0.13	-4.73		
1,150.00	0.34	40.45	1,149.98	2.43	2.73	-0.43	0.13	-0.13	-5.09		
1,160.00	0.33	39.90	1,159.98	2.47	2.76	-0.43	0.13	-0.13	-5.49		
1,170.00	0.32	39.31	1,169.98	2.52	2.80	-0.43	0.13	-0.13	-5.93		
1,180.00	0.31	38.67	1,179.98	2.56	2.83	-0.43	0.13	-0.13	-6.44		
1,190.00	0.29	37.96	1,189.98	2.60	2.87	-0.42	0.13	-0.13	-7.00		

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Project	Lea County (NAD 83)	WVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

Station	Depth (ft)	Interval (ft)	True North (ft)	North (ft)	ΔN/E (ft)	ΔE/W (ft)	Angle (ft)	Grade (ft)	True (ft)	True (ft)
1,200.00	0.28	37.20	1,199.98	2.64	2.90	-0.42	0.13	-0.13	-7.65	
1,210.00	0.28	32.95	1,209.98	2.68	2.92	-0.42	0.21	0.00	-42.47	
1,220.00	0.28	28.72	1,219.98	2.72	2.95	-0.41	0.21	0.01	-42.32	
1,230.00	0.28	24.55	1,229.98	2.76	2.97	-0.39	0.21	0.03	-41.72	
1,240.00	0.29	20.48	1,239.98	2.81	2.99	-0.38	0.21	0.04	-40.70	
1,250.00	0.29	16.55	1,249.98	2.86	3.01	-0.36	0.21	0.06	-39.32	
1,260.00	0.30	12.78	1,259.98	2.91	3.02	-0.33	0.21	0.07	-37.67	
1,270.00	0.31	9.20	1,269.98	2.96	3.03	-0.31	0.21	0.08	-35.81	
1,280.00	0.32	5.82	1,279.98	3.02	3.04	-0.28	0.21	0.09	-33.83	
1,290.00	0.33	2.64	1,289.98	3.07	3.04	-0.24	0.21	0.10	-31.79	
1,300.00	0.34	359.66	1,299.98	3.13	3.04	-0.20	0.21	0.11	-29.76	
1,310.00	0.33	357.27	1,309.98	3.19	3.04	-0.17	0.18	-0.12	-23.86	
1,320.00	0.32	354.72	1,319.98	3.24	3.04	-0.12	0.18	-0.11	-25.56	
1,330.00	0.31	351.99	1,329.98	3.30	3.03	-0.08	0.18	-0.10	-27.33	
1,340.00	0.30	349.07	1,339.98	3.35	3.02	-0.04	0.18	-0.10	-29.16	
1,350.00	0.29	345.97	1,349.98	3.40	3.01	0.00	0.18	-0.09	-31.01	
1,360.00	0.28	342.69	1,359.98	3.45	3.00	0.04	0.18	-0.08	-32.84	
1,370.00	0.27	339.22	1,369.98	3.49	2.98	0.08	0.18	-0.07	-34.61	
1,380.00	0.27	335.60	1,379.98	3.54	2.96	0.12	0.18	-0.06	-36.25	
1,390.00	0.26	331.83	1,389.98	3.58	2.94	0.17	0.18	-0.05	-37.70	
1,400.00	0.26	327.94	1,399.98	3.62	2.92	0.21	0.18	-0.04	-38.90	
1,410.00	0.26	339.98	1,409.98	3.66	2.90	0.25	0.55	0.00	120.38	
1,420.00	0.27	351.50	1,419.98	3.70	2.89	0.29	0.55	0.11	115.18	
1,430.00	0.29	1.71	1,429.98	3.75	2.89	0.32	0.55	0.21	102.19	
1,440.00	0.32	10.32	1,439.98	3.81	2.89	0.36	0.55	0.29	86.04	
1,450.00	0.36	17.36	1,449.98	3.86	2.91	0.38	0.55	0.35	70.45	
1,460.00	0.40	23.08	1,459.98	3.93	2.93	0.41	0.55	0.40	57.12	
1,470.00	0.44	27.71	1,469.98	3.99	2.96	0.43	0.55	0.43	46.39	
1,480.00	0.48	31.51	1,479.98	4.06	3.00	0.44	0.55	0.45	37.96	
1,490.00	0.53	34.65	1,489.97	4.14	3.05	0.46	0.55	0.47	31.38	
1,500.00	0.58	37.27	1,499.97	4.21	3.11	0.47	0.55	0.48	26.22	
1,510.00	0.56	36.36	1,509.97	4.29	3.17	0.47	0.21	-0.19	-9.11	
1,520.00	0.54	35.39	1,519.97	4.37	3.22	0.48	0.21	-0.19	-9.74	
1,530.00	0.52	34.34	1,529.97	4.45	3.28	0.49	0.21	-0.19	-10.43	
1,540.00	0.51	33.22	1,539.97	4.52	3.33	0.51	0.21	-0.18	-11.20	
1,550.00	0.49	32.02	1,549.97	4.60	3.37	0.52	0.21	-0.18	-12.04	
1,560.00	0.47	30.72	1,559.97	4.67	3.42	0.53	0.21	-0.18	-12.97	
1,570.00	0.45	29.32	1,569.97	4.74	3.46	0.55	0.21	-0.18	-14.00	
1,580.00	0.43	27.81	1,579.97	4.80	3.49	0.57	0.21	-0.17	-15.14	
1,590.00	0.42	26.17	1,589.97	4.87	3.53	0.59	0.21	-0.17	-16.39	
1,600.00	0.40	24.39	1,599.97	4.93	3.56	0.61	0.21	-0.17	-17.78	
1,610.00	0.40	24.72	1,609.97	5.00	3.59	0.63	0.04	-0.03	3.34	
1,620.00	0.39	25.06	1,619.97	5.06	3.61	0.65	0.04	-0.03	3.40	
1,630.00	0.39	25.41	1,629.97	5.12	3.64	0.66	0.04	-0.03	3.45	
1,640.00	0.39	25.76	1,639.97	5.18	3.67	0.68	0.04	-0.03	3.50	
1,650.00	0.38	26.12	1,649.97	5.24	3.70	0.70	0.04	-0.03	3.56	
1,660.00	0.38	26.48	1,659.97	5.30	3.73	0.72	0.04	-0.03	3.61	
1,670.00	0.38	26.84	1,669.97	5.36	3.76	0.74	0.04	-0.03	3.67	
1,680.00	0.38	27.22	1,679.97	5.42	3.79	0.75	0.04	-0.03	3.73	
1,690.00	0.37	27.60	1,689.97	5.48	3.82	0.77	0.04	-0.03	3.79	
1,700.00	0.37	27.98	1,699.97	5.54	3.85	0.78	0.04	-0.03	3.85	
1,710.00	0.35	26.20	1,709.97	5.59	3.88	0.80	0.23	-0.20	-17.81	
1,720.00	0.33	24.20	1,719.97	5.65	3.91	0.82	0.23	-0.20	-19.96	
1,730.00	0.31	21.96	1,729.97	5.70	3.93	0.83	0.23	-0.19	-22.45	
1,740.00	0.29	19.42	1,739.97	5.75	3.95	0.85	0.23	-0.19	-25.36	

Black Viper Energy!

Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVL Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MB Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Version	S-Well #1	Database	EDM 2003.14 Server Db

Station	Interval	Depth	True	WGS	SEAW	Vertical	Horizontal	True	True
Number	ft	ft	ft	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
1,750.00	0.27	16.55	1,749.97	5.79	3.96	0.87	0.23	-0.18	-28.76
1,760.00	0.26	13.27	1,759.97	5.84	3.97	0.89	0.23	-0.17	-32.71
1,770.00	0.24	9.55	1,769.97	5.88	3.98	0.91	0.23	-0.16	-37.27
1,780.00	0.23	5.30	1,779.97	5.92	3.99	0.94	0.23	-0.15	-42.46
1,790.00	0.21	0.48	1,789.97	5.96	3.99	0.96	0.23	-0.14	-48.25
1,800.00	0.20	355.03	1,799.97	6.00	3.99	0.99	0.23	-0.12	-54.47
1,810.00	0.22	359.46	1,809.97	6.03	3.99	1.01	0.23	0.16	44.31
1,820.00	0.23	3.26	1,819.97	6.07	3.99	1.04	0.23	0.17	38.04
1,830.00	0.25	6.54	1,829.97	6.11	3.99	1.06	0.23	0.18	32.74
1,840.00	0.27	9.37	1,839.97	6.16	4.00	1.09	0.23	0.19	28.30
1,850.00	0.29	11.83	1,849.97	6.21	4.01	1.11	0.23	0.19	24.59
1,860.00	0.31	13.98	1,859.97	6.26	4.02	1.14	0.23	0.20	21.49
1,870.00	0.33	15.87	1,869.97	6.31	4.03	1.16	0.23	0.20	18.90
1,880.00	0.35	17.54	1,879.97	6.37	4.05	1.19	0.23	0.20	16.71
1,890.00	0.37	19.02	1,889.97	6.43	4.07	1.21	0.23	0.21	14.85
1,900.00	0.39	20.35	1,899.97	6.49	4.09	1.24	0.23	0.21	13.28
1,910.00	0.36	18.81	1,909.97	6.55	4.11	1.26	0.33	-0.32	-15.44
1,920.00	0.33	16.96	1,919.97	6.61	4.13	1.28	0.33	-0.31	-18.42
1,930.00	0.30	14.73	1,929.97	6.66	4.15	1.31	0.33	-0.31	-22.32
1,940.00	0.27	11.98	1,939.97	6.71	4.16	1.33	0.33	-0.30	-27.49
1,950.00	0.24	8.53	1,949.97	6.75	4.17	1.35	0.33	-0.30	-34.52
1,960.00	0.21	4.11	1,959.96	6.79	4.17	1.37	0.33	-0.29	-44.25
1,970.00	0.18	358.31	1,969.96	6.82	4.17	1.40	0.33	-0.27	-57.95
1,980.00	0.16	350.59	1,979.96	6.85	4.17	1.42	0.33	-0.25	-77.24
1,990.00	0.13	340.25	1,989.96	6.88	4.16	1.44	0.33	-0.21	-103.37
2,000.00	0.12	326.80	1,999.96	6.90	4.15	1.46	0.33	-0.15	-134.50
2,010.00	0.14	329.34	2,009.96	6.92	4.14	1.48	0.22	0.22	25.44
2,020.00	0.16	331.21	2,019.96	6.94	4.13	1.51	0.22	0.22	18.69
2,030.00	0.19	332.64	2,029.96	6.97	4.11	1.53	0.22	0.22	14.28
2,040.00	0.21	333.77	2,039.96	7.00	4.10	1.57	0.22	0.22	11.26
2,050.00	0.23	334.68	2,049.96	7.03	4.08	1.60	0.22	0.22	9.10
2,060.00	0.25	335.43	2,059.96	7.07	4.06	1.64	0.22	0.22	7.50
2,070.00	0.27	336.06	2,069.96	7.11	4.05	1.68	0.22	0.22	6.29
2,080.00	0.30	336.59	2,079.96	7.16	4.03	1.73	0.22	0.22	5.34
2,090.00	0.32	337.05	2,089.96	7.20	4.00	1.78	0.22	0.22	4.60
2,100.00	0.34	337.45	2,099.96	7.26	3.98	1.83	0.22	0.22	4.00
2,110.00	0.34	337.18	2,109.96	7.31	3.96	1.88	0.03	0.03	-2.70
2,120.00	0.35	336.92	2,119.96	7.37	3.94	1.93	0.03	0.03	-2.65
2,130.00	0.35	336.65	2,129.96	7.42	3.91	1.99	0.03	0.03	-2.60
2,140.00	0.35	336.40	2,139.96	7.48	3.89	2.04	0.03	0.03	-2.56
2,150.00	0.35	336.15	2,149.96	7.54	3.86	2.10	0.03	0.03	-2.52
2,160.00	0.36	335.90	2,159.96	7.59	3.84	2.16	0.03	0.03	-2.47
2,170.00	0.36	335.66	2,169.96	7.65	3.81	2.21	0.03	0.03	-2.43
2,180.00	0.36	335.42	2,179.96	7.71	3.79	2.27	0.03	0.03	-2.39
2,190.00	0.37	335.18	2,189.96	7.77	3.76	2.33	0.03	0.03	-2.35
2,200.00	0.37	334.95	2,199.96	7.82	3.73	2.39	0.03	0.03	-2.32
2,210.00	0.37	339.02	2,209.96	7.88	3.71	2.45	0.26	-0.02	40.67
2,220.00	0.37	343.11	2,219.96	7.94	3.69	2.50	0.26	0.00	40.88
2,230.00	0.37	347.17	2,229.96	8.01	3.67	2.56	0.26	0.02	40.68
2,240.00	0.37	351.18	2,239.96	8.07	3.66	2.61	0.26	0.04	40.08
2,250.00	0.38	355.09	2,249.96	8.14	3.65	2.66	0.26	0.05	39.12
2,260.00	0.39	358.88	2,259.96	8.20	3.65	2.70	0.26	0.07	37.83
2,270.00	0.39	2.51	2,269.96	8.27	3.65	2.75	0.26	0.09	36.30
2,280.00	0.41	5.97	2,279.96	8.34	3.65	2.79	0.26	0.10	34.59
2,290.00	0.42	9.24	2,289.96	8.41	3.66	2.83	0.26	0.12	32.76

Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3595.00ft (Original Well Elev)
Site:	New Sheriff #10 Fed 1	MD Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Depth:	S-Well #1	Database:	EDM 2003.14 Server Db

Measured Depth (ft)	Correction (ft)	True Depth (ft)	Vertical Depth (ft)	SNOW (ft)	SEAW (ft)	Water Surface (ft)	Depth (ft)	Depth (ft)	True Depth (ft)
2,300.00	0.43	12.33	2,299.96	8.48	3.67	2.87	0.26	0.13	30.88
2,310.00	0.45	16.43	2,309.96	8.56	3.69	2.90	0.39	0.22	40.98
2,320.00	0.48	20.12	2,319.96	8.63	3.72	2.94	0.39	0.25	36.94
2,330.00	0.50	23.44	2,329.96	8.71	3.75	2.96	0.39	0.26	33.19
2,340.00	0.53	26.42	2,339.96	8.80	3.79	2.99	0.39	0.28	29.80
2,350.00	0.56	29.10	2,349.96	8.88	3.83	3.01	0.39	0.29	26.77
2,360.00	0.59	31.51	2,359.96	8.97	3.88	3.03	0.39	0.30	24.07
2,370.00	0.62	33.67	2,369.96	9.06	3.94	3.05	0.39	0.31	21.69
2,380.00	0.65	35.63	2,379.96	9.15	4.01	3.06	0.39	0.32	19.59
2,390.00	0.69	37.41	2,389.96	9.24	4.07	3.07	0.39	0.33	17.75
2,400.00	0.72	39.02	2,399.95	9.34	4.15	3.08	0.39	0.33	16.12
2,410.00	0.77	43.17	2,409.95	9.44	4.24	3.08	0.72	0.48	41.48
2,420.00	0.82	46.81	2,419.95	9.53	4.33	3.07	0.72	0.51	36.47
2,430.00	0.87	50.02	2,429.95	9.63	4.44	3.05	0.72	0.54	32.07
2,440.00	0.93	52.85	2,439.95	9.73	4.57	3.03	0.72	0.56	28.26
2,450.00	0.99	55.34	2,449.95	9.83	4.70	2.99	0.72	0.58	24.97
2,460.00	1.05	57.56	2,459.95	9.93	4.85	2.94	0.72	0.60	22.14
2,470.00	1.11	59.53	2,469.95	10.02	5.01	2.89	0.72	0.61	19.71
2,480.00	1.17	61.29	2,479.94	10.12	5.18	2.82	0.72	0.63	17.62
2,490.00	1.24	62.87	2,489.94	10.22	5.37	2.75	0.72	0.64	15.82
2,500.00	1.30	64.30	2,499.94	10.32	5.57	2.67	0.72	0.65	14.26
2,510.00	1.32	64.17	2,509.94	10.42	5.77	2.58	0.23	0.23	-1.28
2,520.00	1.35	64.05	2,519.93	10.52	5.98	2.49	0.23	0.23	-1.24
2,530.00	1.37	63.93	2,529.93	10.62	6.20	2.40	0.23	0.23	-1.20
2,540.00	1.39	63.81	2,539.93	10.73	6.41	2.31	0.23	0.23	-1.16
2,550.00	1.41	63.70	2,549.93	10.84	6.63	2.21	0.23	0.23	-1.12
2,560.00	1.44	63.59	2,559.92	10.95	6.86	2.12	0.23	0.23	-1.09
2,570.00	1.46	63.49	2,569.92	11.06	7.08	2.02	0.23	0.23	-1.05
2,580.00	1.48	63.38	2,579.92	11.18	7.31	1.93	0.23	0.23	-1.02
2,590.00	1.51	63.29	2,589.91	11.29	7.55	1.83	0.23	0.23	-0.99
2,600.00	1.53	63.19	2,599.91	11.41	7.78	1.73	0.23	0.23	-0.96
2,610.00	1.55	61.87	2,609.91	11.54	8.02	1.64	0.42	0.22	-13.20
2,620.00	1.57	60.59	2,619.90	11.67	8.26	1.55	0.42	0.23	-12.83
2,630.00	1.60	59.34	2,629.90	11.81	8.50	1.46	0.42	0.23	-12.46
2,640.00	1.62	58.13	2,639.89	11.95	8.74	1.37	0.42	0.24	-12.10
2,650.00	1.65	56.96	2,649.89	12.11	8.98	1.30	0.42	0.25	-11.74
2,660.00	1.67	55.82	2,659.89	12.27	9.22	1.22	0.42	0.25	-11.39
2,670.00	1.70	54.71	2,669.88	12.43	9.46	1.15	0.42	0.26	-11.04
2,680.00	1.72	53.64	2,679.88	12.61	9.70	1.09	0.42	0.27	-10.70
2,690.00	1.75	52.61	2,689.87	12.79	9.95	1.02	0.42	0.27	-10.37
2,700.00	1.78	51.60	2,699.87	12.98	10.19	0.97	0.42	0.28	-10.05
2,710.00	1.81	51.61	2,709.86	13.17	10.44	0.91	0.32	0.32	0.10
2,720.00	1.84	51.62	2,719.86	13.37	10.69	0.86	0.32	0.32	0.10
2,730.00	1.88	51.63	2,729.85	13.57	10.94	0.80	0.32	0.32	0.10
2,740.00	1.91	51.64	2,739.85	13.78	11.20	0.74	0.32	0.32	0.09
2,750.00	1.94	51.65	2,749.84	13.99	11.46	0.68	0.32	0.32	0.09
2,760.00	1.97	51.66	2,759.83	14.20	11.73	0.62	0.32	0.32	0.09
2,770.00	2.00	51.67	2,769.83	14.41	12.00	0.56	0.32	0.32	0.09
2,780.00	2.04	51.67	2,779.82	14.63	12.28	0.50	0.32	0.32	0.08
2,790.00	2.07	51.68	2,789.82	14.85	12.56	0.44	0.32	0.32	0.08
2,800.00	2.10	51.69	2,799.81	15.08	12.85	0.37	0.32	0.32	0.08
2,810.00	2.08	51.60	2,809.80	15.31	13.13	0.31	0.15	-0.15	-0.91
2,820.00	2.07	51.51	2,819.80	15.53	13.42	0.24	0.15	-0.15	-0.92
2,830.00	2.05	51.41	2,829.79	15.76	13.70	0.18	0.15	-0.15	-0.93
2,840.00	2.04	51.32	2,839.78	15.98	13.98	0.12	0.15	-0.15	-0.95

Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3595.00ft (Original Well Elev)
Site:	New Sheriff #10 Fed 1	MP Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Design:	S-Well #1	Database:	EDM 2003.14 Server Db

Survey									
Measured Depth (ft)	Interval (ft)	True Depth (ft)	Vertical (ft)	N-S (ft)	E-W (ft)	Vertical Section (ft)	Scale Factor (ft/ft)	Strike Angle (Degrees)	True Rate (ft/1000)
2,850.00	2.02	51.22	2,849.78	16.20	14.25	0.06	0.15	-0.15	-0.96
2,860.00	2.01	51.13	2,859.77	16.42	14.53	0.00	0.15	-0.15	-0.98
2,870.00	1.99	51.03	2,869.77	16.64	14.80	-0.06	0.15	-0.15	-0.99
2,880.00	1.98	50.93	2,879.76	16.86	15.07	-0.11	0.15	-0.15	-1.01
2,890.00	1.96	50.82	2,889.75	17.08	15.34	-0.17	0.15	-0.15	-1.02
2,900.00	1.95	50.72	2,899.75	17.29	15.60	-0.23	0.15	-0.15	-1.04
2,910.00	1.92	51.29	2,909.74	17.51	15.86	-0.28	0.36	-0.31	5.68
2,920.00	1.89	51.87	2,919.74	17.71	16.12	-0.34	0.36	-0.31	5.87
2,930.00	1.86	52.48	2,929.73	17.91	16.38	-0.40	0.36	-0.31	6.06
2,940.00	1.83	53.11	2,939.73	18.11	16.64	-0.46	0.36	-0.30	6.26
2,950.00	1.80	53.75	2,949.72	18.29	16.89	-0.53	0.36	-0.30	6.47
2,960.00	1.77	54.42	2,959.72	18.48	17.14	-0.60	0.36	-0.30	6.69
2,970.00	1.74	55.12	2,969.71	18.65	17.39	-0.67	0.36	-0.30	6.92
2,980.00	1.71	55.83	2,979.71	18.82	17.64	-0.74	0.36	-0.29	7.16
2,990.00	1.68	56.57	2,989.70	18.99	17.89	-0.81	0.36	-0.29	7.41
3,000.00	1.65	57.34	2,999.70	19.15	18.13	-0.89	0.36	-0.29	7.67
3,010.00	1.60	58.00	3,009.69	19.30	18.37	-0.97	0.55	-0.51	6.56
3,020.00	1.55	58.70	3,019.69	19.44	18.60	-1.05	0.55	-0.51	7.00
3,030.00	1.50	59.44	3,029.69	19.58	18.83	-1.13	0.55	-0.51	7.47
3,040.00	1.45	60.24	3,039.68	19.71	19.05	-1.21	0.55	-0.51	8.00
3,050.00	1.40	61.10	3,049.68	19.83	19.27	-1.29	0.55	-0.50	8.58
3,060.00	1.35	62.02	3,059.68	19.94	19.48	-1.37	0.55	-0.50	9.22
3,070.00	1.30	63.01	3,069.67	20.05	19.68	-1.46	0.55	-0.50	9.92
3,080.00	1.25	64.09	3,079.67	20.15	19.88	-1.54	0.55	-0.49	10.71
3,090.00	1.20	65.24	3,089.67	20.24	20.07	-1.62	0.55	-0.49	11.58
3,100.00	1.15	66.50	3,099.67	20.32	20.26	-1.71	0.55	-0.48	12.56
3,110.00	1.11	68.22	3,109.67	20.40	20.44	-1.79	0.50	-0.36	17.23
3,120.00	1.08	70.06	3,119.66	20.47	20.62	-1.88	0.50	-0.35	18.38
3,130.00	1.04	72.02	3,129.66	20.53	20.80	-1.97	0.50	-0.34	19.60
3,140.00	1.01	74.11	3,139.66	20.58	20.97	-2.07	0.50	-0.33	20.90
3,150.00	0.98	76.34	3,149.66	20.62	21.14	-2.16	0.50	-0.31	22.26
3,160.00	0.95	78.71	3,159.66	20.66	21.30	-2.26	0.50	-0.30	23.70
3,170.00	0.92	81.22	3,169.66	20.69	21.46	-2.36	0.50	-0.28	25.19
3,180.00	0.90	83.90	3,179.66	20.71	21.62	-2.47	0.50	-0.26	26.71
3,190.00	0.87	86.72	3,189.65	20.72	21.77	-2.58	0.50	-0.24	28.25
3,200.00	0.85	89.70	3,199.65	20.73	21.92	-2.69	0.50	-0.22	29.78
3,210.00	0.85	92.34	3,209.65	20.73	22.07	-2.80	0.39	-0.03	26.39
3,220.00	0.85	94.99	3,219.65	20.72	22.22	-2.91	0.39	-0.01	26.52
3,230.00	0.85	97.65	3,229.65	20.70	22.37	-3.04	0.39	0.01	26.54
3,240.00	0.85	100.29	3,239.65	20.68	22.51	-3.16	0.39	0.02	26.44
3,250.00	0.85	102.91	3,249.65	20.65	22.66	-3.29	0.39	0.04	26.24
3,260.00	0.86	105.51	3,259.65	20.61	22.80	-3.42	0.39	0.06	25.92
3,270.00	0.87	108.06	3,269.65	20.57	22.95	-3.56	0.39	0.08	25.51
3,280.00	0.88	110.56	3,279.64	20.52	23.09	-3.70	0.39	0.09	25.01
3,290.00	0.89	113.00	3,289.64	20.46	23.23	-3.84	0.39	0.11	24.43
3,300.00	0.90	115.38	3,299.64	20.40	23.37	-3.99	0.39	0.13	23.79
3,310.00	0.90	113.90	3,309.64	20.33	23.52	-4.14	0.23	0.02	-14.76
3,320.00	0.91	112.44	3,319.64	20.27	23.66	-4.29	0.23	0.03	-14.67
3,330.00	0.91	110.98	3,329.64	20.21	23.81	-4.44	0.23	0.04	-14.56
3,340.00	0.91	109.54	3,339.64	20.15	23.96	-4.59	0.23	0.04	-14.44
3,350.00	0.92	108.11	3,349.64	20.10	24.11	-4.74	0.23	0.05	-14.30
3,360.00	0.92	106.69	3,359.63	20.05	24.26	-4.88	0.23	0.05	-14.14
3,370.00	0.93	105.30	3,369.63	20.01	24.42	-5.03	0.23	0.06	-13.97
3,380.00	0.94	103.92	3,379.63	19.97	24.58	-5.18	0.23	0.06	-13.79
3,390.00	0.94	102.56	3,389.63	19.93	24.74	-5.32	0.23	0.07	-13.59

Black Viper Energy

Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVS Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Well-Depth	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

Station	Depth	Interval	True Depth	True Elev	True Elev	True Elev	True Elev	True Elev	True Elev
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
3,400.00	0.95	101.22	3,399.63	19.90	24.90	-5.46	0.23	0.07	-13.39
3,410.00	0.95	103.76	3,409.63	19.86	25.06	-5.61	0.42	0.03	25.44
3,420.00	0.96	106.29	3,419.63	19.82	25.22	-5.76	0.42	0.05	25.22
3,430.00	0.96	108.78	3,429.62	19.77	25.38	-5.91	0.42	0.07	24.91
3,440.00	0.97	111.23	3,439.62	19.71	25.54	-6.07	0.42	0.09	24.52
3,450.00	0.98	113.63	3,449.62	19.64	25.70	-6.23	0.42	0.10	24.04
3,460.00	1.00	115.98	3,459.62	19.57	25.85	-6.39	0.42	0.12	23.50
3,470.00	1.01	118.27	3,469.62	19.49	26.01	-6.56	0.42	0.14	22.90
3,480.00	1.03	120.50	3,479.62	19.40	26.16	-6.74	0.42	0.15	22.25
3,490.00	1.04	122.65	3,489.62	19.31	26.32	-6.92	0.42	0.17	21.57
3,500.00	1.06	124.74	3,499.61	19.21	26.47	-7.10	0.42	0.18	20.86
3,510.00	1.07	123.42	3,509.61	19.10	26.63	-7.28	0.29	0.15	-13.24
3,520.00	1.09	122.13	3,519.61	19.00	26.78	-7.47	0.29	0.15	-12.88
3,530.00	1.11	120.88	3,529.61	18.90	26.95	-7.66	0.29	0.16	-12.51
3,540.00	1.12	119.66	3,539.61	18.80	27.12	-7.85	0.29	0.16	-12.15
3,550.00	1.14	118.48	3,549.60	18.71	27.29	-8.04	0.29	0.17	-11.80
3,560.00	1.16	117.34	3,559.60	18.61	27.46	-8.24	0.29	0.17	-11.45
3,570.00	1.17	116.22	3,569.60	18.52	27.65	-8.43	0.29	0.18	-11.11
3,580.00	1.19	115.15	3,579.60	18.43	27.83	-8.63	0.29	0.18	-10.77
3,590.00	1.21	114.10	3,589.60	18.35	28.02	-8.83	0.29	0.19	-10.45
3,600.00	1.23	113.09	3,599.59	18.26	28.22	-9.03	0.29	0.19	-10.13
3,610.00	1.24	114.66	3,609.59	18.17	28.41	-9.24	0.34	0.05	15.66
3,620.00	1.24	116.21	3,619.59	18.08	28.61	-9.45	0.34	0.06	15.53
3,630.00	1.25	117.75	3,629.59	17.98	28.80	-9.66	0.34	0.07	15.37
3,640.00	1.26	119.26	3,639.58	17.88	29.00	-9.87	0.34	0.08	15.19
3,650.00	1.26	120.76	3,649.58	17.77	29.19	-10.09	0.34	0.09	14.99
3,660.00	1.27	122.24	3,659.58	17.65	29.37	-10.30	0.34	0.09	14.77
3,670.00	1.28	123.70	3,669.58	17.53	29.56	-10.52	0.34	0.10	14.55
3,680.00	1.30	125.13	3,679.57	17.40	29.75	-10.75	0.34	0.11	14.31
3,690.00	1.31	126.53	3,689.57	17.27	29.93	-10.97	0.34	0.12	14.05
3,700.00	1.32	127.91	3,699.57	17.13	30.11	-11.20	0.34	0.13	13.79
3,710.00	1.32	128.73	3,709.57	16.99	30.30	-11.43	0.19	0.02	8.19
3,720.00	1.32	129.55	3,719.56	16.84	30.47	-11.66	0.19	0.02	8.17
3,730.00	1.33	130.36	3,729.56	16.69	30.65	-11.89	0.19	0.02	8.14
3,740.00	1.33	131.17	3,739.56	16.54	30.83	-12.13	0.19	0.03	8.11
3,750.00	1.33	131.98	3,749.56	16.39	31.00	-12.36	0.19	0.03	8.08
3,760.00	1.33	132.78	3,759.55	16.23	31.17	-12.59	0.19	0.03	8.04
3,770.00	1.34	133.59	3,769.55	16.07	31.34	-12.82	0.19	0.03	8.00
3,780.00	1.34	134.38	3,779.55	15.91	31.51	-13.06	0.19	0.04	7.96
3,790.00	1.35	135.17	3,789.55	15.75	31.68	-13.29	0.19	0.04	7.92
3,800.00	1.35	135.96	3,799.54	15.58	31.84	-13.53	0.19	0.04	7.87
3,810.00	1.38	136.14	3,809.54	15.41	32.01	-13.76	0.32	0.32	1.76
3,820.00	1.41	136.30	3,819.54	15.23	32.18	-14.01	0.32	0.32	1.68
3,830.00	1.45	136.47	3,829.53	15.05	32.35	-14.26	0.32	0.32	1.61
3,840.00	1.48	136.62	3,839.53	14.86	32.52	-14.51	0.32	0.32	1.54
3,850.00	1.51	136.77	3,849.53	14.67	32.70	-14.77	0.32	0.32	1.47
3,860.00	1.54	136.91	3,859.52	14.48	32.88	-15.03	0.32	0.32	1.41
3,870.00	1.57	137.04	3,869.52	14.28	33.07	-15.31	0.32	0.32	1.36
3,880.00	1.61	137.17	3,879.52	14.08	33.26	-15.58	0.32	0.32	1.30
3,890.00	1.64	137.30	3,889.51	13.87	33.45	-15.86	0.32	0.32	1.25
3,900.00	1.67	137.42	3,899.51	13.66	33.65	-16.15	0.32	0.32	1.20
3,910.00	1.73	136.87	3,909.50	13.44	33.85	-16.45	0.64	0.61	-5.50
3,920.00	1.79	136.36	3,919.50	13.22	34.06	-16.75	0.64	0.62	-5.12
3,930.00	1.85	135.88	3,929.49	12.99	34.28	-17.07	0.64	0.62	-4.78

Black Viper Energy Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

Measured Depth (ft)	Inclination (°)	Shut In (ft)	Vertical Depth (ft)	N-S (ft)	E-W (ft)	Vertical Section (ft)	Depth Ref. (ft/1000)	Angle Ref. (ft/1000)	True Rate (ft/1000)
3,940.00	1.92	135.43	3,939.49	12.75	34.51	-17.40	0.64	0.62	-4.47
3,950.00	1.98	135.01	3,949.48	12.51	34.75	-17.74	0.64	0.62	-4.19
3,960.00	2.04	134.62	3,959.48	12.26	35.00	-18.09	0.64	0.62	-3.94
3,970.00	2.10	134.25	3,969.47	12.01	35.26	-18.45	0.64	0.62	-3.70
3,980.00	2.17	133.90	3,979.46	11.75	35.52	-18.82	0.64	0.62	-3.49
3,990.00	2.23	133.57	3,989.46	11.49	35.80	-19.20	0.64	0.62	-3.30
4,000.00	2.29	133.26	3,999.45	11.22	36.09	-19.60	0.64	0.62	-3.12
4,010.00	2.32	132.86	4,009.44	10.94	36.38	-20.00	0.30	0.26	-4.01
4,020.00	2.34	132.47	4,019.43	10.67	36.68	-20.40	0.30	0.26	-3.92
4,030.00	2.37	132.08	4,029.42	10.39	36.98	-20.81	0.30	0.26	-3.83
4,040.00	2.39	131.71	4,039.41	10.11	37.29	-21.23	0.30	0.26	-3.75
4,050.00	2.42	131.34	4,049.41	9.83	37.61	-21.65	0.30	0.26	-3.67
4,060.00	2.44	130.98	4,059.40	9.55	37.93	-22.07	0.30	0.26	-3.59
4,070.00	2.47	130.63	4,069.39	9.27	38.25	-22.50	0.30	0.26	-3.52
4,080.00	2.50	130.29	4,079.38	8.99	38.58	-22.94	0.30	0.26	-3.44
4,090.00	2.52	129.95	4,089.37	8.71	38.92	-23.37	0.30	0.26	-3.37
4,100.00	2.55	129.62	4,099.36	8.43	39.26	-23.82	0.30	0.26	-3.30
4,110.00	2.57	129.07	4,109.35	8.14	39.60	-24.26	0.33	0.22	-5.49
4,120.00	2.59	128.53	4,119.34	7.86	39.95	-24.71	0.33	0.22	-5.40
4,130.00	2.62	128.00	4,129.33	7.58	40.31	-25.17	0.33	0.22	-5.31
4,140.00	2.64	127.48	4,139.32	7.30	40.67	-25.62	0.33	0.23	-5.22
4,150.00	2.66	126.97	4,149.31	7.02	41.04	-26.09	0.33	0.23	-5.13
4,160.00	2.69	126.46	4,159.30	6.74	41.41	-26.55	0.33	0.23	-5.04
4,170.00	2.71	125.97	4,169.28	6.46	41.79	-27.02	0.33	0.23	-4.95
4,180.00	2.73	125.48	4,179.27	6.19	42.18	-27.49	0.33	0.24	-4.87
4,190.00	2.76	125.00	4,189.26	5.91	42.57	-27.97	0.33	0.24	-4.79
4,200.00	2.78	124.53	4,199.25	5.63	42.97	-28.45	0.33	0.24	-4.70
4,210.00	2.79	124.50	4,209.24	5.36	43.37	-28.93	0.13	0.13	-0.28
4,220.00	2.81	124.47	4,219.23	5.08	43.77	-29.41	0.13	0.13	-0.28
4,230.00	2.82	124.45	4,229.21	4.81	44.18	-29.90	0.13	0.13	-0.28
4,240.00	2.83	124.42	4,239.20	4.53	44.58	-30.39	0.13	0.13	-0.27
4,250.00	2.84	124.39	4,249.19	4.25	44.99	-30.88	0.13	0.13	-0.27
4,260.00	2.86	124.37	4,259.18	3.97	45.40	-31.38	0.13	0.13	-0.27
4,270.00	2.87	124.34	4,269.16	3.68	45.81	-31.87	0.13	0.13	-0.27
4,280.00	2.88	124.31	4,279.15	3.40	46.23	-32.37	0.13	0.13	-0.26
4,290.00	2.90	124.29	4,289.14	3.12	46.64	-32.87	0.13	0.13	-0.26
4,300.00	2.91	124.26	4,299.13	2.83	47.06	-33.37	0.13	0.13	-0.26
4,310.00	2.90	124.09	4,309.11	2.55	47.48	-33.88	0.10	-0.05	-1.70
4,320.00	2.90	123.92	4,319.10	2.26	47.90	-34.38	0.10	-0.05	-1.71
4,330.00	2.89	123.75	4,329.09	1.98	48.32	-34.88	0.10	-0.05	-1.72
4,340.00	2.89	123.58	4,339.08	1.70	48.74	-35.38	0.10	-0.05	-1.72
4,350.00	2.88	123.40	4,349.06	1.42	49.16	-35.88	0.10	-0.05	-1.73
4,360.00	2.88	123.23	4,359.05	1.15	49.58	-36.37	0.10	-0.05	-1.73
4,370.00	2.87	123.06	4,369.04	0.87	50.00	-36.87	0.10	-0.05	-1.74
4,380.00	2.87	122.88	4,379.03	0.60	50.42	-37.37	0.10	-0.05	-1.74
4,390.00	2.86	122.71	4,389.01	0.33	50.84	-37.86	0.10	-0.05	-1.75
4,400.00	2.86	122.53	4,399.00	0.06	51.26	-38.35	0.10	-0.05	-1.76
4,410.00	2.86	122.62	4,408.99	-0.21	51.69	-38.85	0.06	0.04	0.90
4,420.00	2.87	122.71	4,418.98	-0.48	52.11	-39.34	0.06	0.04	0.90
4,430.00	2.87	122.80	4,428.96	-0.75	52.53	-39.84	0.06	0.04	0.90
4,440.00	2.88	122.89	4,438.95	-1.02	52.95	-40.33	0.06	0.04	0.89
4,450.00	2.88	122.98	4,448.94	-1.29	53.37	-40.83	0.06	0.04	0.89
4,460.00	2.88	123.07	4,458.92	-1.57	53.79	-41.33	0.06	0.04	0.89
4,470.00	2.89	123.16	4,468.91	-1.84	54.21	-41.82	0.06	0.04	0.89

Black Viper Energy

Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Station	S-Well #1	Database	EDM 2003.14 Server Db

Station	Interval	Depth	True Vertical	True North	True East	True South	True West	True North	True East
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
4,480.00	2.89	123.24	4,478.90	-2.12	54.64	-42.32	0.06	0.04	0.88
4,490.00	2.90	123.33	4,488.89	-2.40	55.06	-42.82	0.06	0.04	0.88
4,500.00	2.90	123.42	4,498.87	-2.67	55.48	-43.32	0.06	0.04	0.88
4,510.00	2.90	123.33	4,508.86	-2.95	55.90	-43.82	0.06	0.03	-0.93
4,520.00	2.91	123.23	4,518.85	-3.23	56.33	-44.33	0.06	0.03	-0.93
4,530.00	2.91	123.14	4,528.84	-3.51	56.75	-44.83	0.06	0.03	-0.92
4,540.00	2.91	123.05	4,538.82	-3.79	57.18	-45.33	0.06	0.03	-0.92
4,550.00	2.91	122.96	4,548.81	-4.06	57.60	-45.83	0.06	0.03	-0.92
4,560.00	2.92	122.87	4,558.80	-4.34	58.03	-46.34	0.06	0.03	-0.92
4,570.00	2.92	122.77	4,568.78	-4.61	58.46	-46.84	0.06	0.03	-0.92
4,580.00	2.92	122.68	4,578.77	-4.89	58.89	-47.34	0.06	0.03	-0.92
4,590.00	2.93	122.59	4,588.76	-5.17	59.32	-47.85	0.06	0.03	-0.91
4,600.00	2.93	122.50	4,598.74	-5.44	59.75	-48.35	0.06	0.03	-0.91
4,610.00	2.92	122.61	4,608.73	-5.72	60.18	-48.86	0.15	-0.14	1.11
4,620.00	2.90	122.72	4,618.72	-5.99	60.60	-49.36	0.15	-0.14	1.12
4,630.00	2.89	122.84	4,628.71	-6.26	61.03	-49.86	0.15	-0.14	1.13
4,640.00	2.87	122.95	4,638.69	-6.54	61.45	-50.35	0.15	-0.14	1.14
4,650.00	2.86	123.07	4,648.68	-6.81	61.87	-50.85	0.15	-0.14	1.15
4,660.00	2.85	123.18	4,658.67	-7.08	62.29	-51.34	0.15	-0.14	1.17
4,670.00	2.83	123.30	4,668.66	-7.35	62.70	-51.83	0.15	-0.14	1.18
4,680.00	2.82	123.42	4,678.64	-7.62	63.11	-52.32	0.15	-0.14	1.19
4,690.00	2.80	123.54	4,688.63	-7.89	63.52	-52.80	0.15	-0.14	1.20
4,700.00	2.79	123.66	4,698.62	-8.16	63.93	-53.29	0.15	-0.14	1.21
4,710.00	2.73	123.56	4,708.61	-8.43	64.33	-53.77	0.57	-0.57	-1.04
4,720.00	2.68	123.45	4,718.60	-8.69	64.72	-54.23	0.57	-0.57	-1.08
4,730.00	2.62	123.33	4,728.59	-8.94	65.11	-54.69	0.57	-0.57	-1.13
4,740.00	2.56	123.22	4,738.58	-9.19	65.49	-55.14	0.57	-0.57	-1.18
4,750.00	2.50	123.09	4,748.57	-9.43	65.86	-55.57	0.57	-0.57	-1.24
4,760.00	2.45	122.96	4,758.56	-9.67	66.22	-56.00	0.57	-0.57	-1.29
4,770.00	2.39	122.83	4,768.55	-9.90	66.57	-56.42	0.57	-0.57	-1.35
4,780.00	2.33	122.69	4,778.54	-10.12	66.92	-56.83	0.57	-0.57	-1.42
4,790.00	2.28	122.54	4,788.53	-10.34	67.26	-57.22	0.57	-0.57	-1.49
4,800.00	2.22	122.38	4,798.52	-10.55	67.59	-57.61	0.57	-0.57	-1.57
4,810.00	2.18	121.61	4,808.52	-10.75	67.91	-57.99	0.52	-0.43	-7.67
4,820.00	2.13	120.82	4,818.51	-10.95	68.24	-58.36	0.52	-0.43	-7.98
4,830.00	2.09	119.99	4,828.50	-11.13	68.55	-58.72	0.52	-0.42	-8.30
4,840.00	2.05	119.12	4,838.50	-11.31	68.87	-59.07	0.52	-0.42	-8.64
4,850.00	2.01	118.22	4,848.49	-11.48	69.18	-59.42	0.52	-0.41	-9.00
4,860.00	1.97	117.28	4,858.48	-11.64	69.49	-59.76	0.52	-0.41	-9.37
4,870.00	1.93	116.31	4,868.48	-11.80	69.79	-60.09	0.52	-0.40	-9.77
4,880.00	1.89	115.29	4,878.47	-11.94	70.09	-60.41	0.52	-0.40	-10.18
4,890.00	1.85	114.23	4,888.47	-12.08	70.38	-60.72	0.52	-0.39	-10.62
4,900.00	1.81	113.12	4,898.46	-12.21	70.68	-61.02	0.52	-0.38	-11.07
4,910.00	1.75	113.35	4,908.46	-12.33	70.96	-61.32	0.59	-0.58	2.34
4,920.00	1.69	113.60	4,918.45	-12.45	71.24	-61.60	0.59	-0.58	2.51
4,930.00	1.64	113.87	4,928.45	-12.57	71.50	-61.88	0.59	-0.58	2.68
4,940.00	1.58	114.16	4,938.44	-12.68	71.76	-62.15	0.59	-0.58	2.88
4,950.00	1.52	114.47	4,948.44	-12.79	72.01	-62.41	0.59	-0.58	3.10
4,960.00	1.46	114.81	4,958.44	-12.90	72.24	-62.65	0.59	-0.58	3.35
4,970.00	1.40	115.17	4,968.43	-13.01	72.47	-62.89	0.59	-0.58	3.62
4,980.00	1.35	115.56	4,978.43	-13.11	72.69	-63.12	0.59	-0.58	3.94
4,990.00	1.29	115.99	4,988.43	-13.21	72.89	-63.35	0.59	-0.58	4.29
5,000.00	1.23	116.46	4,998.43	-13.30	73.09	-63.56	0.59	-0.58	4.69
5,010.00	1.19	115.86	5,008.42	-13.40	73.28	-63.76	0.40	-0.38	-6.02

Black Viper Energy Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVL Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

Survey	Station	Depth	Interval	True	Interval	True	Interval	True	Interval
Station	Depth	Interval	True	Interval	True	Interval	True	Interval	True
5,020.00	1.15	115.22	5,018.42	-13.49	73.46	-63.96	0.40	-0.38	-6.41
5,030.00	1.12	114.53	5,028.42	-13.57	73.64	-64.15	0.40	-0.38	-6.84
5,040.00	1.08	113.80	5,038.42	-13.65	73.82	-64.33	0.40	-0.37	-7.32
5,050.00	1.04	113.02	5,048.42	-13.72	73.99	-64.51	0.40	-0.37	-7.84
5,060.00	1.01	112.18	5,058.41	-13.79	74.15	-64.68	0.40	-0.37	-8.42
5,070.00	0.97	111.27	5,068.41	-13.85	74.31	-64.84	0.40	-0.37	-9.06
5,080.00	0.93	110.29	5,078.41	-13.91	74.47	-64.99	0.40	-0.36	-9.77
5,090.00	0.90	109.24	5,088.41	-13.97	74.62	-65.14	0.40	-0.36	-10.57
5,100.00	0.86	108.09	5,098.41	-14.02	74.76	-65.28	0.40	-0.36	-11.45
5,110.00	0.85	108.19	5,108.41	-14.06	74.91	-65.42	0.09	-0.09	0.95
5,120.00	0.84	108.28	5,118.41	-14.11	75.05	-65.56	0.09	-0.09	0.97
5,130.00	0.83	108.38	5,128.41	-14.15	75.19	-65.69	0.09	-0.09	0.99
5,140.00	0.82	108.48	5,138.41	-14.20	75.32	-65.82	0.09	-0.09	1.01
5,150.00	0.81	108.59	5,148.40	-14.25	75.46	-65.95	0.09	-0.09	1.04
5,160.00	0.81	108.69	5,158.40	-14.29	75.59	-66.08	0.09	-0.09	1.06
5,170.00	0.80	108.80	5,168.40	-14.34	75.72	-66.21	0.09	-0.09	1.08
5,180.00	0.79	108.91	5,178.40	-14.38	75.86	-66.34	0.09	-0.09	1.11
5,190.00	0.78	109.02	5,188.40	-14.43	75.99	-66.47	0.09	-0.09	1.13
5,200.00	0.77	109.14	5,198.40	-14.47	76.11	-66.59	0.09	-0.09	1.16
5,210.00	0.73	109.12	5,208.40	-14.51	76.24	-66.71	0.44	-0.44	-0.20
5,220.00	0.68	109.10	5,218.40	-14.55	76.35	-66.83	0.44	-0.44	-0.23
5,230.00	0.64	109.07	5,228.40	-14.59	76.46	-66.93	0.44	-0.44	-0.26
5,240.00	0.59	109.04	5,238.40	-14.63	76.56	-67.03	0.44	-0.44	-0.30
5,250.00	0.55	109.01	5,248.40	-14.66	76.66	-67.13	0.44	-0.44	-0.34
5,260.00	0.51	108.97	5,258.40	-14.69	76.74	-67.21	0.44	-0.44	-0.40
5,270.00	0.46	108.92	5,268.40	-14.72	76.82	-67.29	0.44	-0.44	-0.48
5,280.00	0.42	108.86	5,278.40	-14.74	76.90	-67.36	0.44	-0.44	-0.58
5,290.00	0.37	108.79	5,288.39	-14.76	76.96	-67.42	0.44	-0.44	-0.72
5,300.00	0.33	108.70	5,298.39	-14.78	77.02	-67.48	0.44	-0.44	-0.91
5,310.00	0.29	106.87	5,308.39	-14.80	77.07	-67.53	0.40	-0.39	-18.28
5,320.00	0.25	104.49	5,318.39	-14.81	77.12	-67.57	0.40	-0.38	-23.85
5,330.00	0.22	101.26	5,328.39	-14.82	77.16	-67.61	0.40	-0.38	-32.30
5,340.00	0.18	96.67	5,338.39	-14.83	77.19	-67.64	0.40	-0.37	-45.83
5,350.00	0.14	89.78	5,348.39	-14.83	77.22	-67.66	0.40	-0.35	-68.90
5,360.00	0.11	78.73	5,358.39	-14.83	77.24	-67.67	0.40	-0.32	-110.55
5,370.00	0.09	60.31	5,368.39	-14.82	77.26	-67.68	0.40	-0.25	-184.15
5,380.00	0.08	32.95	5,378.39	-14.81	77.27	-67.68	0.40	-0.10	-273.65
5,390.00	0.09	5.24	5,388.39	-14.80	77.27	-67.68	0.40	0.09	-277.14
5,400.00	0.11	346.32	5,398.39	-14.78	77.27	-67.67	0.40	0.24	-189.15
5,410.00	0.12	353.49	5,408.39	-14.76	77.27	-67.65	0.16	0.06	71.75
5,420.00	0.12	359.83	5,418.39	-14.74	77.27	-67.64	0.16	0.08	63.37
5,430.00	0.13	5.34	5,428.39	-14.72	77.27	-67.62	0.16	0.09	55.10
5,440.00	0.14	10.09	5,438.39	-14.69	77.27	-67.61	0.16	0.10	47.51
5,450.00	0.16	14.18	5,448.39	-14.67	77.28	-67.60	0.16	0.11	40.86
5,460.00	0.17	17.70	5,458.39	-14.64	77.28	-67.58	0.16	0.12	35.17
5,470.00	0.18	20.73	5,468.39	-14.61	77.29	-67.57	0.16	0.13	30.38
5,480.00	0.19	23.37	5,478.39	-14.58	77.31	-67.56	0.16	0.13	26.37
5,490.00	0.21	25.67	5,488.39	-14.55	77.32	-67.55	0.16	0.13	23.01
5,500.00	0.22	27.69	5,498.39	-14.52	77.34	-67.54	0.16	0.14	20.19
5,510.00	0.21	25.52	5,508.39	-14.48	77.35	-67.53	0.16	-0.14	-21.66
5,520.00	0.19	23.04	5,518.39	-14.45	77.37	-67.52	0.16	-0.14	-24.80
5,530.00	0.18	20.19	5,528.39	-14.42	77.38	-67.51	0.16	-0.13	-28.55
5,540.00	0.17	16.88	5,538.39	-14.39	77.39	-67.50	0.16	-0.13	-33.05
5,550.00	0.15	13.04	5,548.39	-14.37	77.40	-67.49	0.16	-0.12	-38.42

Black Viper Energy Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Depth	S-Well #1	Database	EDM 2003.14 Server Db

Depth (ft)	Inclination (°)	Vertical Depth (ft)	Vertical Depth (ft)	EN/S (ft)	EN/W (ft)	Vertical Section (ft)	Dogleg Rate (1/100ft)	Build Rate (1/100ft)	Turn Rate (1/100ft)
5,560.00	0.14	8.56	5,558.39	-14.34	77.40	-67.47	0.16	-0.11	-44.78
5,570.00	0.13	3.35	5,568.39	-14.32	77.40	-67.46	0.16	-0.10	-52.15
5,580.00	0.12	357.31	5,578.39	-14.30	77.40	-67.45	0.16	-0.09	-60.41
5,590.00	0.12	350.40	5,588.39	-14.28	77.40	-67.43	0.16	-0.07	-69.10
5,600.00	0.11	342.66	5,598.39	-14.26	77.40	-67.41	0.16	-0.06	-77.38
5,610.00	0.14	343.53	5,608.39	-14.24	77.39	-67.40	0.32	0.32	8.66
5,620.00	0.17	344.07	5,618.39	-14.21	77.38	-67.37	0.32	0.32	5.48
5,630.00	0.21	344.45	5,628.39	-14.18	77.37	-67.34	0.32	0.32	3.77
5,640.00	0.24	344.73	5,638.39	-14.14	77.36	-67.31	0.32	0.32	2.76
5,650.00	0.27	344.94	5,648.39	-14.10	77.35	-67.27	0.32	0.32	2.11
5,660.00	0.30	345.10	5,658.39	-14.05	77.34	-67.23	0.32	0.32	1.66
5,670.00	0.33	345.24	5,668.39	-13.99	77.33	-67.19	0.32	0.32	1.34
5,680.00	0.37	345.35	5,678.39	-13.94	77.31	-67.14	0.32	0.32	1.11
5,690.00	0.40	345.44	5,688.39	-13.87	77.29	-67.08	0.32	0.32	0.93
5,700.00	0.43	345.52	5,698.39	-13.80	77.28	-67.02	0.32	0.32	0.79
5,710.00	0.41	344.68	5,708.39	-13.73	77.26	-66.96	0.22	-0.21	-8.39
5,720.00	0.39	343.75	5,718.39	-13.66	77.24	-66.90	0.22	-0.21	-9.28
5,730.00	0.37	342.72	5,728.39	-13.60	77.22	-66.84	0.22	-0.21	-10.32
5,740.00	0.35	341.57	5,738.39	-13.54	77.20	-66.79	0.22	-0.20	-11.54
5,750.00	0.33	340.27	5,748.39	-13.49	77.18	-66.74	0.22	-0.20	-12.97
5,760.00	0.31	338.80	5,758.39	-13.43	77.16	-66.69	0.22	-0.20	-14.67
5,770.00	0.29	337.13	5,768.39	-13.39	77.14	-66.64	0.22	-0.20	-16.71
5,780.00	0.27	335.22	5,778.39	-13.34	77.12	-66.60	0.22	-0.20	-19.16
5,790.00	0.25	333.00	5,788.39	-13.30	77.10	-66.56	0.22	-0.19	-22.15
5,800.00	0.23	330.42	5,798.39	-13.26	77.08	-66.52	0.22	-0.19	-25.81
5,810.00	0.24	327.51	5,808.39	-13.23	77.06	-66.48	0.14	0.08	-29.13
5,820.00	0.25	324.79	5,818.39	-13.19	77.04	-66.44	0.14	0.09	-27.17
5,830.00	0.26	322.26	5,828.39	-13.16	77.01	-66.40	0.14	0.09	-25.29
5,840.00	0.27	319.91	5,838.39	-13.12	76.98	-66.35	0.14	0.10	-23.50
5,850.00	0.28	317.73	5,848.39	-13.09	76.95	-66.31	0.14	0.10	-21.83
5,860.00	0.29	315.70	5,858.39	-13.05	76.92	-66.26	0.14	0.10	-20.28
5,870.00	0.30	313.82	5,868.39	-13.02	76.88	-66.21	0.14	0.11	-18.84
5,880.00	0.31	312.07	5,878.39	-12.98	76.84	-66.15	0.14	0.11	-17.51
5,890.00	0.32	310.44	5,888.39	-12.94	76.80	-66.10	0.14	0.11	-16.29
5,900.00	0.33	308.92	5,898.39	-12.91	76.76	-66.04	0.14	0.11	-15.17
5,910.00	0.32	307.04	5,908.39	-12.87	76.71	-65.99	0.16	-0.12	-18.78
5,920.00	0.31	305.01	5,918.39	-12.84	76.67	-65.93	0.16	-0.12	-20.28
5,930.00	0.29	302.82	5,928.39	-12.81	76.63	-65.88	0.16	-0.12	-21.90
5,940.00	0.28	300.46	5,938.39	-12.79	76.58	-65.83	0.16	-0.11	-23.65
5,950.00	0.27	297.91	5,948.39	-12.76	76.54	-65.78	0.16	-0.11	-25.52
5,960.00	0.26	295.16	5,958.39	-12.74	76.50	-65.74	0.16	-0.10	-27.52
5,970.00	0.25	292.19	5,968.39	-12.72	76.46	-65.69	0.16	-0.09	-29.62
5,980.00	0.24	289.01	5,978.39	-12.71	76.42	-65.65	0.16	-0.09	-31.79
5,990.00	0.24	285.62	5,988.39	-12.69	76.38	-65.62	0.16	-0.08	-33.99
6,000.00	0.23	282.00	5,998.39	-12.69	76.34	-65.58	0.16	-0.07	-36.16
6,010.00	0.25	280.76	6,008.39	-12.68	76.30	-65.54	0.25	0.25	-12.35
6,020.00	0.28	279.75	6,018.39	-12.67	76.25	-65.50	0.25	0.25	-10.16
6,030.00	0.30	278.90	6,028.39	-12.66	76.20	-65.46	0.25	0.25	-8.50
6,040.00	0.33	278.18	6,038.39	-12.65	76.15	-65.41	0.25	0.25	-7.21
6,050.00	0.35	277.56	6,048.39	-12.64	76.09	-65.36	0.25	0.25	-6.20
6,060.00	0.38	277.02	6,058.39	-12.64	76.02	-65.31	0.25	0.25	-5.38
6,070.00	0.40	276.55	6,068.39	-12.63	75.96	-65.25	0.25	0.25	-4.71
6,080.00	0.43	276.13	6,078.39	-12.62	75.88	-65.20	0.25	0.25	-4.16
6,090.00	0.45	275.76	6,088.39	-12.61	75.81	-65.13	0.25	0.25	-3.70

Black Viper Energy!

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	IVD Reference:	WELL @ 3595.00ft (Original Well Elev)
Site:	New Sheriff #10 Fed 1	MD Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Design:	S-Well #1	Database:	EDM 2003.14 Server Db

Station	Depth (ft)	Interval (ft)	True North (ft)	True East (ft)	N/E/S	E/W	Vertical (ft)	Depth (ft)	True North (ft)	True East (ft)
6,100.00	0.48	275.43	6,098.39	-12.60	75.73	-65.07	0.25	0.25	-3.31	
6,110.00	0.48	273.84	6,108.39	-12.60	75.64	-65.00	0.13	0.00	-15.95	
6,120.00	0.48	272.24	6,118.39	-12.59	75.56	-64.93	0.13	0.01	-15.91	
6,130.00	0.48	270.66	6,128.39	-12.59	75.47	-64.87	0.13	0.01	-15.85	
6,140.00	0.48	269.08	6,138.38	-12.59	75.39	-64.81	0.13	0.01	-15.77	
6,150.00	0.49	267.52	6,148.38	-12.59	75.31	-64.74	0.13	0.02	-15.66	
6,160.00	0.49	265.96	6,158.38	-12.60	75.22	-64.68	0.13	0.02	-15.53	
6,170.00	0.49	264.42	6,168.38	-12.61	75.14	-64.63	0.13	0.03	-15.38	
6,180.00	0.49	262.90	6,178.38	-12.61	75.05	-64.57	0.13	0.03	-15.21	
6,190.00	0.50	261.40	6,188.38	-12.63	74.96	-64.51	0.13	0.03	-15.02	
6,200.00	0.50	259.92	6,198.38	-12.64	74.88	-64.46	0.13	0.04	-14.82	
6,210.00	0.50	258.54	6,208.38	-12.66	74.79	-64.40	0.12	-0.02	-13.82	
6,220.00	0.50	257.14	6,218.38	-12.68	74.71	-64.35	0.12	-0.02	-13.94	
6,230.00	0.49	255.74	6,228.38	-12.70	74.62	-64.30	0.12	-0.02	-14.05	
6,240.00	0.49	254.32	6,238.38	-12.72	74.54	-64.26	0.12	-0.01	-14.14	
6,250.00	0.49	252.90	6,248.38	-12.74	74.46	-64.21	0.12	-0.01	-14.22	
6,260.00	0.49	251.47	6,258.38	-12.77	74.38	-64.17	0.12	-0.01	-14.28	
6,270.00	0.49	250.04	6,268.38	-12.80	74.30	-64.12	0.12	-0.01	-14.32	
6,280.00	0.49	248.61	6,278.38	-12.83	74.22	-64.08	0.12	0.00	-14.34	
6,290.00	0.49	247.17	6,288.38	-12.86	74.14	-64.05	0.12	0.00	-14.35	
6,300.00	0.49	245.74	6,298.38	-12.89	74.06	-64.01	0.12	0.00	-14.33	
6,310.00	0.51	246.36	6,308.38	-12.93	73.98	-63.97	0.18	0.17	6.23	
6,320.00	0.52	246.95	6,318.38	-12.96	73.90	-63.94	0.18	0.17	5.83	
6,330.00	0.54	247.49	6,328.38	-13.00	73.81	-63.90	0.18	0.17	5.47	
6,340.00	0.56	248.01	6,338.38	-13.04	73.72	-63.85	0.18	0.17	5.13	
6,350.00	0.57	248.49	6,348.38	-13.07	73.63	-63.81	0.18	0.17	4.83	
6,360.00	0.59	248.94	6,358.38	-13.11	73.54	-63.76	0.18	0.17	4.55	
6,370.00	0.61	249.37	6,368.38	-13.15	73.44	-63.71	0.18	0.17	4.30	
6,380.00	0.63	249.78	6,378.38	-13.18	73.34	-63.66	0.18	0.17	4.06	
6,390.00	0.64	250.17	6,388.37	-13.22	73.23	-63.61	0.18	0.17	3.85	
6,400.00	0.66	250.53	6,398.37	-13.26	73.13	-63.56	0.18	0.17	3.65	
6,410.00	0.66	251.98	6,408.37	-13.30	73.02	-63.50	0.17	-0.01	14.46	
6,420.00	0.66	253.42	6,418.37	-13.33	72.91	-63.44	0.17	0.00	14.49	
6,430.00	0.66	254.87	6,428.37	-13.36	72.80	-63.38	0.17	0.00	14.50	
6,440.00	0.66	256.32	6,438.37	-13.39	72.69	-63.31	0.17	0.00	14.49	
6,450.00	0.66	257.77	6,448.37	-13.42	72.57	-63.25	0.17	0.01	14.46	
6,460.00	0.66	259.21	6,458.37	-13.44	72.46	-63.18	0.17	0.01	14.42	
6,470.00	0.66	260.65	6,468.37	-13.46	72.35	-63.10	0.17	0.02	14.36	
6,480.00	0.66	262.07	6,478.37	-13.48	72.23	-63.03	0.17	0.02	14.28	
6,490.00	0.67	263.49	6,488.37	-13.49	72.12	-62.95	0.17	0.02	14.18	
6,500.00	0.67	264.90	6,498.37	-13.50	72.00	-62.87	0.17	0.03	14.07	
6,510.00	0.67	264.28	6,508.37	-13.52	71.88	-62.79	0.07	0.01	-6.20	
6,520.00	0.67	263.66	6,518.37	-13.53	71.77	-62.71	0.07	0.01	-6.19	
6,530.00	0.67	263.04	6,528.37	-13.54	71.65	-62.64	0.07	0.01	-6.18	
6,540.00	0.67	262.43	6,538.36	-13.56	71.54	-62.56	0.07	0.01	-6.16	
6,550.00	0.67	261.81	6,548.36	-13.57	71.42	-62.48	0.07	0.01	-6.14	
6,560.00	0.68	261.20	6,558.36	-13.59	71.30	-62.41	0.07	0.01	-6.13	
6,570.00	0.68	260.59	6,568.36	-13.61	71.19	-62.33	0.07	0.01	-6.11	
6,580.00	0.68	259.98	6,578.36	-13.63	71.07	-62.26	0.07	0.01	-6.09	
6,590.00	0.68	259.37	6,588.36	-13.65	70.95	-62.19	0.07	0.01	-6.06	
6,600.00	0.68	258.77	6,598.36	-13.67	70.84	-62.11	0.07	0.01	-6.04	
6,610.00	0.68	258.34	6,608.36	-13.70	70.72	-62.04	0.05	0.02	-4.26	
6,620.00	0.68	257.92	6,618.36	-13.72	70.60	-61.97	0.05	0.02	-4.23	
6,630.00	0.69	257.50	6,628.36	-13.75	70.49	-61.90	0.05	0.02	-4.21	
6,640.00	0.69	257.08	6,638.36	-13.77	70.37	-61.83	0.05	0.02	-4.19	

Black Viper Energy Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

Wellbore Depth (ft)	Inclination (°)	Vertical Depth (ft)	True Vertical Depth (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)
Depth (ft)	Inclination (°)	Vertical Depth (ft)	True Vertical Depth (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)
6,650.00	0.69	256.66	6,648.36	-13.80	70.25	-61.76	0.05	0.02	-4.16
6,660.00	0.69	256.25	6,658.36	-13.83	70.14	-61.69	0.05	0.02	-4.14
6,670.00	0.69	255.84	6,668.36	-13.86	70.02	-61.62	0.05	0.02	-4.11
6,680.00	0.70	255.43	6,678.35	-13.89	69.90	-61.55	0.05	0.02	-4.09
6,690.00	0.70	255.02	6,688.35	-13.92	69.78	-61.49	0.05	0.02	-4.07
6,700.00	0.70	254.62	6,698.35	-13.95	69.67	-61.42	0.05	0.02	-4.04
6,710.00	0.72	254.42	6,708.35	-13.98	69.55	-61.35	0.23	0.23	-1.97
6,720.00	0.75	254.24	6,718.35	-14.02	69.42	-61.28	0.23	0.23	-1.85
6,730.00	0.77	254.06	6,728.35	-14.05	69.30	-61.21	0.23	0.23	-1.74
6,740.00	0.79	253.90	6,738.35	-14.09	69.16	-61.14	0.23	0.23	-1.64
6,750.00	0.81	253.75	6,748.35	-14.13	69.03	-61.06	0.23	0.23	-1.54
6,760.00	0.84	253.60	6,758.35	-14.17	68.89	-60.99	0.23	0.23	-1.46
6,770.00	0.86	253.46	6,768.35	-14.21	68.75	-60.91	0.23	0.23	-1.38
6,780.00	0.88	253.33	6,778.35	-14.26	68.60	-60.83	0.23	0.23	-1.31
6,790.00	0.91	253.21	6,788.34	-14.30	68.45	-60.74	0.23	0.23	-1.24
6,800.00	0.93	253.09	6,798.34	-14.35	68.30	-60.66	0.23	0.23	-1.18
6,810.00	0.95	253.40	6,808.34	-14.39	68.14	-60.57	0.21	0.20	3.13
6,820.00	0.97	253.70	6,818.34	-14.44	67.98	-60.49	0.21	0.20	3.00
6,830.00	0.99	253.99	6,828.34	-14.49	67.82	-60.39	0.21	0.20	2.88
6,840.00	1.01	254.27	6,838.34	-14.54	67.65	-60.30	0.21	0.20	2.76
6,850.00	1.03	254.53	6,848.34	-14.59	67.48	-60.20	0.21	0.20	2.66
6,860.00	1.05	254.79	6,858.33	-14.63	67.30	-60.10	0.21	0.20	2.56
6,870.00	1.07	255.03	6,868.33	-14.68	67.13	-60.00	0.21	0.20	2.46
6,880.00	1.09	255.27	6,878.33	-14.73	66.94	-59.90	0.21	0.20	2.37
6,890.00	1.11	255.50	6,888.33	-14.78	66.76	-59.79	0.21	0.20	2.28
6,900.00	1.13	255.72	6,898.33	-14.83	66.57	-59.68	0.21	0.20	2.20
6,910.00	1.16	255.34	6,908.32	-14.88	66.37	-59.57	0.33	0.32	-3.75
6,920.00	1.19	254.99	6,918.32	-14.93	66.18	-59.46	0.33	0.32	-3.55
6,930.00	1.23	254.65	6,928.32	-14.98	65.97	-59.34	0.33	0.32	-3.37
6,940.00	1.26	254.33	6,938.32	-15.04	65.76	-59.22	0.33	0.32	-3.20
6,950.00	1.29	254.03	6,948.32	-15.10	65.55	-59.10	0.33	0.32	-3.04
6,960.00	1.32	253.74	6,958.31	-15.17	65.33	-58.98	0.33	0.32	-2.89
6,970.00	1.35	253.46	6,968.31	-15.23	65.11	-58.86	0.33	0.32	-2.76
6,980.00	1.39	253.20	6,978.31	-15.30	64.88	-58.73	0.33	0.32	-2.63
6,990.00	1.42	252.95	6,988.30	-15.37	64.64	-58.60	0.33	0.32	-2.51
7,000.00	1.45	252.71	6,998.30	-15.45	64.40	-58.47	0.33	0.32	-2.40
7,010.00	1.45	253.09	7,008.30	-15.52	64.16	-58.34	0.10	0.03	3.85
7,020.00	1.46	253.48	7,018.29	-15.59	63.92	-58.21	0.10	0.03	3.83
7,030.00	1.46	253.86	7,028.29	-15.66	63.68	-58.07	0.10	0.03	3.82
7,040.00	1.46	254.24	7,038.29	-15.73	63.43	-57.93	0.10	0.03	3.80
7,050.00	1.46	254.62	7,048.28	-15.80	63.18	-57.79	0.10	0.03	3.79
7,060.00	1.47	255.00	7,058.28	-15.87	62.94	-57.65	0.10	0.03	3.77
7,070.00	1.47	255.37	7,068.28	-15.94	62.69	-57.51	0.10	0.03	3.76
7,080.00	1.47	255.75	7,078.28	-16.00	62.44	-57.37	0.10	0.03	3.74
7,090.00	1.48	256.12	7,088.27	-16.06	62.19	-57.22	0.10	0.03	3.73
7,100.00	1.48	256.49	7,098.27	-16.12	61.94	-57.07	0.10	0.03	3.71
7,110.00	1.46	256.90	7,108.27	-16.18	61.69	-56.93	0.23	-0.20	4.07
7,120.00	1.44	257.32	7,118.26	-16.24	61.44	-56.78	0.23	-0.20	4.19
7,130.00	1.42	257.75	7,128.26	-16.29	61.20	-56.63	0.23	-0.20	4.31
7,140.00	1.40	258.19	7,138.26	-16.34	60.96	-56.49	0.23	-0.20	4.43
7,150.00	1.38	258.65	7,148.25	-16.39	60.72	-56.34	0.23	-0.20	4.56
7,160.00	1.36	259.12	7,158.25	-16.44	60.49	-56.20	0.23	-0.20	4.70
7,170.00	1.34	259.60	7,168.25	-16.48	60.26	-56.05	0.23	-0.20	4.84
7,180.00	1.32	260.10	7,178.24	-16.52	60.03	-55.91	0.23	-0.20	4.98
7,190.00	1.30	260.61	7,188.24	-16.56	59.80	-55.76	0.23	-0.20	5.13

Black Viper Energy!

Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MB Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

MEASUREMENT	INCHES	FEET	VERTICAL	DEPTH	N/S	E/W	VERTICAL	DEPTH	DEPTH	TURN
DEPTH	INCHES	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET	ANGLE
(ft)	(in)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°/100ft)
7,200.00	1.28	261.14	7,198.24	-16.60	59.58	-55.62	0.23	-0.20	5.29	
7,210.00	1.26	261.11	7,208.24	-16.63	59.36	-55.48	0.19	-0.19	-0.28	
7,220.00	1.24	261.08	7,218.23	-16.67	59.15	-55.34	0.19	-0.19	-0.29	
7,230.00	1.22	261.05	7,228.23	-16.70	58.93	-55.20	0.19	-0.19	-0.29	
7,240.00	1.20	261.02	7,238.23	-16.73	58.73	-55.07	0.19	-0.19	-0.30	
7,250.00	1.18	260.99	7,248.23	-16.76	58.52	-54.94	0.19	-0.19	-0.31	
7,260.00	1.17	260.96	7,258.23	-16.80	58.32	-54.81	0.19	-0.19	-0.32	
7,270.00	1.15	260.93	7,268.22	-16.83	58.12	-54.68	0.19	-0.19	-0.33	
7,280.00	1.13	260.89	7,278.22	-16.86	57.92	-54.55	0.19	-0.19	-0.35	
7,290.00	1.11	260.86	7,288.22	-16.89	57.73	-54.43	0.19	-0.19	-0.36	
7,300.00	1.09	260.82	7,298.22	-16.92	57.54	-54.31	0.19	-0.19	-0.37	
7,310.00	1.09	260.78	7,308.22	-16.95	57.35	-54.19	0.04	-0.04	-0.39	
7,320.00	1.08	260.74	7,318.21	-16.98	57.17	-54.07	0.04	-0.04	-0.39	
7,330.00	1.08	260.70	7,328.21	-17.01	56.98	-53.95	0.04	-0.04	-0.39	
7,340.00	1.07	260.66	7,338.21	-17.04	56.79	-53.83	0.04	-0.04	-0.40	
7,350.00	1.07	260.62	7,348.21	-17.07	56.61	-53.71	0.04	-0.04	-0.40	
7,360.00	1.07	260.58	7,358.21	-17.10	56.43	-53.59	0.04	-0.04	-0.40	
7,370.00	1.06	260.54	7,368.21	-17.13	56.24	-53.48	0.04	-0.04	-0.40	
7,380.00	1.06	260.50	7,378.20	-17.16	56.06	-53.36	0.04	-0.04	-0.41	
7,390.00	1.05	260.46	7,388.20	-17.19	55.88	-53.24	0.04	-0.04	-0.41	
7,400.00	1.05	260.42	7,398.20	-17.23	55.70	-53.13	0.04	-0.04	-0.41	
7,410.00	1.04	259.70	7,408.20	-17.26	55.52	-53.01	0.18	-0.12	-7.20	
7,420.00	1.03	258.96	7,418.20	-17.29	55.34	-52.90	0.18	-0.12	-7.37	
7,430.00	1.02	258.21	7,428.20	-17.33	55.17	-52.80	0.18	-0.11	-7.54	
7,440.00	1.00	257.44	7,438.19	-17.36	54.99	-52.69	0.18	-0.11	-7.71	
7,450.00	0.99	256.65	7,448.19	-17.40	54.82	-52.59	0.18	-0.11	-7.88	
7,460.00	0.98	255.85	7,458.19	-17.44	54.66	-52.49	0.18	-0.11	-8.06	
7,470.00	0.97	255.02	7,468.19	-17.49	54.49	-52.40	0.18	-0.11	-8.24	
7,480.00	0.96	254.18	7,478.19	-17.53	54.33	-52.31	0.18	-0.11	-8.42	
7,490.00	0.95	253.32	7,488.19	-17.58	54.17	-52.22	0.18	-0.10	-8.60	
7,500.00	0.94	252.44	7,498.19	-17.63	54.01	-52.13	0.18	-0.10	-8.79	
7,510.00	0.93	252.31	7,508.18	-17.67	53.86	-52.05	0.07	-0.07	-1.31	
7,520.00	0.93	252.18	7,518.18	-17.72	53.70	-51.96	0.07	-0.07	-1.33	
7,530.00	0.92	252.04	7,528.18	-17.77	53.55	-51.88	0.07	-0.07	-1.35	
7,540.00	0.91	251.91	7,538.18	-17.82	53.40	-51.80	0.07	-0.07	-1.37	
7,550.00	0.90	251.77	7,548.18	-17.87	53.25	-51.72	0.07	-0.07	-1.39	
7,560.00	0.90	251.63	7,558.18	-17.92	53.10	-51.64	0.07	-0.07	-1.41	
7,570.00	0.89	251.48	7,568.18	-17.97	52.95	-51.56	0.07	-0.07	-1.43	
7,580.00	0.88	251.34	7,578.18	-18.02	52.80	-51.49	0.07	-0.07	-1.45	
7,590.00	0.88	251.19	7,588.17	-18.07	52.66	-51.41	0.07	-0.07	-1.48	
7,600.00	0.87	251.04	7,598.17	-18.12	52.51	-51.33	0.07	-0.07	-1.50	
7,610.00	0.87	251.25	7,608.17	-18.17	52.37	-51.26	0.05	-0.04	2.13	
7,620.00	0.86	251.47	7,618.17	-18.22	52.22	-51.18	0.05	-0.04	2.15	
7,630.00	0.86	251.68	7,628.17	-18.26	52.08	-51.11	0.05	-0.04	2.17	
7,640.00	0.85	251.90	7,638.17	-18.31	51.94	-51.03	0.05	-0.04	2.19	
7,650.00	0.85	252.12	7,648.17	-18.36	51.80	-50.96	0.05	-0.04	2.21	
7,660.00	0.85	252.35	7,658.17	-18.40	51.66	-50.88	0.05	-0.04	2.23	
7,670.00	0.84	252.57	7,668.17	-18.45	51.52	-50.81	0.05	-0.04	2.25	
7,680.00	0.84	252.80	7,678.16	-18.49	51.38	-50.73	0.05	-0.04	2.27	
7,690.00	0.83	253.03	7,688.16	-18.53	51.24	-50.66	0.05	-0.04	2.29	
7,700.00	0.83	253.26	7,698.16	-18.57	51.10	-50.58	0.05	-0.04	2.32	
7,710.00	0.83	256.20	7,708.16	-18.61	50.96	-50.50	0.43	0.02	29.39	
7,720.00	0.84	259.12	7,718.16	-18.64	50.82	-50.41	0.43	0.04	29.18	
7,730.00	0.84	262.00	7,728.16	-18.67	50.67	-50.32	0.43	0.06	28.82	
7,740.00	0.85	264.83	7,738.16	-18.68	50.53	-50.22	0.43	0.08	28.33	

Black Viper Energy

Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	Md Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

Measured Depth (ft)	Interval (ft)	True Depth (ft)	Vertical Depth (ft)	Horizontal Distance (ft)	True Azimuth (deg)	Vertical Section (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)	Horizontal Distance (ft)
7,750.00	0.86	267.60	7,748.16	-18.69	50.38	-50.12	0.43	0.10	27.72
7,760.00	0.87	270.30	7,758.16	-18.70	50.23	-50.01	0.43	0.12	27.00
7,770.00	0.89	272.92	7,768.15	-18.69	50.07	-49.89	0.43	0.14	26.20
7,780.00	0.90	275.46	7,778.15	-18.68	49.92	-49.76	0.43	0.16	25.32
7,790.00	0.92	277.90	7,788.15	-18.66	49.76	-49.63	0.43	0.18	24.40
7,800.00	0.94	280.24	7,798.15	-18.64	49.60	-49.50	0.43	0.19	23.44
7,810.00	0.92	276.92	7,808.15	-18.61	49.44	-49.36	0.56	-0.15	-33.24
7,820.00	0.91	273.49	7,818.15	-18.60	49.28	-49.23	0.56	-0.12	-34.23
7,830.00	0.90	269.99	7,828.15	-18.59	49.12	-49.11	0.56	-0.09	-35.02
7,840.00	0.90	266.43	7,838.15	-18.60	48.96	-48.99	0.56	-0.05	-35.56
7,850.00	0.90	262.85	7,848.14	-18.61	48.81	-48.89	0.56	-0.02	-35.84
7,860.00	0.90	259.27	7,858.14	-18.64	48.65	-48.79	0.56	0.02	-35.84
7,870.00	0.90	255.71	7,868.14	-18.67	48.50	-48.70	0.56	0.05	-35.56
7,880.00	0.91	252.21	7,878.14	-18.72	48.35	-48.61	0.56	0.09	-35.02
7,890.00	0.92	248.78	7,888.14	-18.77	48.20	-48.53	0.56	0.12	-34.23
7,900.00	0.94	245.46	7,898.14	-18.83	48.05	-48.46	0.56	0.15	-33.24
7,910.00	0.96	251.66	7,908.14	-18.89	47.89	-48.39	1.06	0.24	61.96
7,920.00	1.00	257.49	7,918.13	-18.94	47.73	-48.29	1.06	0.34	58.36
7,930.00	1.01	260.01	7,928.13	-18.97	47.55	-48.19	0.45	0.10	25.14
7,940.00	1.01	261.22	7,938.13	-19.00	47.38	-48.08	0.21	-0.03	12.14
7,950.00	1.00	262.44	7,948.13	-19.02	47.21	-47.96	0.21	-0.02	12.20
7,960.00	1.00	263.67	7,958.13	-19.05	47.03	-47.85	0.21	-0.02	12.24
7,970.00	1.00	264.89	7,968.13	-19.06	46.86	-47.73	0.21	-0.01	12.28
7,979.00	1.00	266.00	7,977.13	-19.08	46.70	-47.62	0.21	-0.01	12.30
First MWD Survey									
7,980.00	1.00	266.90	7,978.13	-19.08	46.69	-47.61	1.60	0.32	89.92
7,990.00	1.05	275.51	7,988.12	-19.07	46.51	-47.47	1.60	0.45	86.08
8,000.00	1.12	283.24	7,998.12	-19.04	46.32	-47.31	1.60	0.67	77.37
8,010.00	1.20	290.00	8,008.12	-18.98	46.13	-47.13	1.60	0.85	67.56
8,020.00	1.41	295.52	8,018.12	-18.89	45.92	-46.91	2.44	2.10	55.19
8,030.00	1.63	299.58	8,028.11	-18.77	45.68	-46.65	2.44	2.19	40.63
8,040.00	1.85	302.67	8,038.11	-18.61	45.42	-46.35	2.44	2.25	30.88
8,050.00	2.10	305.70	8,048.10	-18.42	45.14	-46.01	2.63	2.41	30.34
8,060.00	2.35	308.24	8,058.10	-18.19	44.83	-45.63	2.68	2.49	25.37
8,070.00	2.60	310.29	8,068.09	-17.91	44.50	-45.20	2.68	2.53	20.47
8,080.00	2.87	311.16	8,078.08	-17.60	44.14	-44.72	2.74	2.71	8.76
8,090.00	3.15	311.40	8,088.06	-17.26	43.74	-44.19	2.82	2.81	2.35
8,100.00	3.43	311.60	8,098.05	-16.88	43.31	-43.62	2.82	2.81	1.97
8,110.00	3.71	312.65	8,108.03	-16.46	42.85	-43.00	2.86	2.78	10.56
8,120.00	3.99	314.81	8,118.00	-16.00	42.36	-42.33	3.13	2.78	21.52
8,130.00	4.27	316.67	8,127.98	-15.48	41.86	-41.61	3.13	2.83	18.69
8,140.00	4.56	317.99	8,137.95	-14.91	41.34	-40.84	3.09	2.92	13.18
8,150.00	4.87	317.96	8,147.91	-14.30	40.79	-40.03	3.13	3.12	-0.35
8,160.00	5.19	317.93	8,157.88	-13.65	40.20	-39.15	3.13	3.13	-0.31
8,170.00	5.50	317.90	8,167.83	-12.96	39.58	-38.23	3.13	3.13	-0.27
8,180.00	5.82	318.26	8,177.78	-12.22	38.92	-37.25	3.24	3.22	3.60
8,190.00	6.14	318.58	8,187.73	-11.44	38.23	-36.21	3.24	3.23	3.22
8,200.00	6.47	318.87	8,197.67	-10.62	37.50	-35.13	3.24	3.23	2.90
8,210.00	6.86	319.51	8,207.60	-9.74	36.75	-33.98	4.04	3.97	6.34
8,220.00	7.27	320.11	8,217.52	-8.80	35.95	-32.76	4.13	4.06	6.03
8,230.00	7.68	320.65	8,227.44	-7.80	35.12	-31.47	4.13	4.07	5.39
8,240.00	8.00	320.61	8,237.35	-6.74	34.26	-30.12	3.19	3.19	-0.39
8,250.00	8.28	320.35	8,247.24	-5.65	33.36	-28.73	2.84	2.81	-2.56
8,260.00	8.56	320.11	8,257.14	-4.52	32.42	-27.28	2.84	2.81	-2.40

Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3595.00ft (Original Well Elev)
Site:	New Sheriff #10 Fed 1	MP Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Depth:	S-Well #1	Database:	EDM 2003.14 Server Db

Station	Depth	Angle	Length	Delta	Delta	Delta	Delta	Delta	Delta
Station	Depth	Angle	Length	Delta	Delta	Delta	Delta	Delta	Delta
8,270.00	8.78	319.69	8,267.02	-3.37	31.45	-25.79	2.27	2.18	-4.25
8,280.00	8.93	319.08	8,276.90	-2.20	30.45	-24.26	1.81	1.56	-6.06
8,290.00	9.09	318.50	8,286.78	-1.02	29.41	-22.71	1.81	1.57	-5.85
8,300.00	9.31	317.92	8,296.65	0.17	28.35	-21.12	2.41	2.22	-5.76
8,310.00	9.69	317.36	8,306.51	1.39	27.24	-19.48	3.86	3.74	-5.63
8,320.00	10.06	316.84	8,316.37	2.64	26.07	-17.78	3.86	3.75	-5.22
8,330.00	10.43	316.27	8,326.21	3.94	24.85	-16.00	3.80	3.67	-5.70
8,340.00	10.71	314.98	8,336.04	5.25	23.57	-14.17	3.71	2.86	-12.88
8,350.00	11.00	313.76	8,345.86	6.56	22.22	-12.29	3.71	2.91	-12.21
8,360.00	11.30	312.60	8,355.67	7.89	20.81	-10.36	3.71	2.95	-11.59
8,370.00	11.61	312.10	8,365.47	9.22	19.34	-8.37	3.27	3.12	-4.96
8,380.00	11.92	311.63	8,375.26	10.59	17.82	-6.33	3.27	3.12	-4.70
8,390.00	12.24	311.19	8,385.04	11.97	16.25	-4.24	3.27	3.13	-4.47
8,400.00	12.35	311.28	8,394.81	13.37	14.65	-2.11	1.14	1.13	0.90
8,410.00	12.41	311.50	8,404.58	14.79	13.04	0.04	0.78	0.62	2.19
8,420.00	12.47	311.71	8,414.34	16.22	11.43	2.19	0.78	0.63	2.17
8,430.00	12.56	311.88	8,424.10	17.67	9.81	4.36	0.89	0.81	1.63
8,440.00	12.65	312.00	8,433.86	19.12	8.19	6.54	0.98	0.94	1.26
8,450.00	12.74	312.13	8,443.62	20.60	6.56	8.74	0.98	0.94	1.24
8,460.00	12.89	312.04	8,453.37	22.08	4.91	10.95	1.45	1.43	-0.83
8,470.00	13.11	311.66	8,463.11	23.58	3.24	13.20	2.35	2.18	-3.83
8,480.00	13.32	311.29	8,472.85	25.10	1.53	15.49	2.35	2.19	-3.71
8,490.00	13.46	311.04	8,482.58	26.63	-0.22	17.81	1.49	1.38	-2.46
8,500.00	13.27	311.26	8,492.30	28.15	-1.96	20.12	1.94	-1.88	2.13
8,510.00	13.09	311.47	8,502.04	29.65	-3.68	22.40	1.94	-1.87	2.19
8,520.00	12.90	311.70	8,511.78	31.15	-5.36	24.65	1.94	-1.87	2.26
8,530.00	12.93	311.35	8,521.53	32.63	-7.03	26.89	0.83	0.31	-3.46
8,540.00	12.96	311.01	8,531.28	34.10	-8.72	29.13	0.83	0.31	-3.44
8,550.00	12.99	310.67	8,541.02	35.57	-10.42	31.37	0.83	0.32	-3.42
8,560.00	13.00	310.60	8,550.77	37.04	-12.12	33.62	0.17	0.06	-0.68
8,570.00	13.00	310.60	8,560.51	38.50	-13.83	35.87	0.00	0.00	0.00
8,580.00	13.00	310.60	8,570.25	39.96	-15.54	38.12	0.00	0.00	0.00
8,590.00	12.87	310.77	8,580.00	41.42	-17.24	40.36	1.37	-1.31	1.69
8,600.00	12.68	311.02	8,589.75	42.87	-18.91	42.57	1.95	-1.88	2.47
8,610.00	12.49	311.27	8,599.51	44.31	-20.55	44.75	1.95	-1.87	2.54
8,620.00	12.48	311.11	8,609.28	45.73	-22.17	46.90	0.38	-0.16	-1.61
8,630.00	12.63	310.54	8,619.04	47.15	-23.82	49.08	1.99	1.56	-5.71
8,640.00	12.79	309.98	8,628.79	48.57	-25.50	51.28	1.99	1.57	-5.57
8,650.00	12.94	309.53	8,638.54	49.99	-27.21	53.50	1.78	1.48	-4.49
8,660.00	13.06	309.31	8,648.28	51.42	-28.95	55.75	1.34	1.25	-2.22
8,670.00	13.19	309.09	8,658.02	52.86	-30.71	58.02	1.34	1.25	-2.18
8,680.00	13.29	308.90	8,667.76	54.30	-32.49	60.31	1.10	1.00	-1.96
8,690.00	13.16	308.87	8,677.49	55.73	-34.27	62.60	1.25	-1.25	-0.31
8,700.00	13.04	308.84	8,687.23	57.16	-36.03	64.86	1.25	-1.25	-0.31
8,710.00	12.91	308.80	8,696.98	58.56	-37.78	67.10	1.25	-1.25	-0.32
8,720.00	12.87	308.60	8,706.72	59.96	-39.52	69.33	0.62	-0.42	-2.05
8,730.00	12.84	308.37	8,716.47	61.34	-41.26	71.55	0.60	-0.32	-2.26
8,740.00	12.81	308.15	8,726.22	62.72	-43.01	73.77	0.60	-0.32	-2.27
8,750.00	12.67	308.29	8,735.98	64.08	-44.74	75.97	1.36	-1.32	1.49
8,760.00	12.52	308.54	8,745.74	65.44	-46.45	78.15	1.65	-1.56	2.48
8,770.00	12.36	308.80	8,755.50	66.78	-48.13	80.30	1.65	-1.56	2.54
8,780.00	12.41	309.04	8,765.27	68.13	-49.80	82.44	0.72	0.50	2.40
8,790.00	12.60	309.26	8,775.03	69.49	-51.48	84.60	1.93	1.87	2.22
8,800.00	12.79	309.47	8,784.79	70.89	-53.17	86.80	1.93	1.88	2.15

Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3595.00ft (Original Well Elev)
Site:	New Sheriff #10 Fed 1	MD Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Decision:	S-Well #1	Database:	EDM 2003.14 Server Db

Measured Depth (ft)	Inclination (°)	Height (ft)	Vertical Depth (ft)	IN-S (ft)	RAW (ft)	Vertical Section (ft)	Dogleg Rate (100ft)	Build Rate (100ft)	Turn Rate (100ft)
8,810.00	12.90	309.96	8,794.54	72.31	-54.89	89.02	1.55	1.11	4.89
8,820.00	12.90	310.87	8,804.29	73.75	-56.59	91.25	2.02	-0.02	9.06
8,830.00	12.90	311.78	8,814.03	75.23	-58.26	93.49	2.02	0.01	9.06
8,840.00	12.91	312.34	8,823.78	76.73	-59.92	95.72	1.27	0.15	5.66
8,850.00	12.97	311.55	8,833.53	78.22	-61.58	97.96	1.87	0.60	-7.88
8,860.00	13.03	310.77	8,843.27	79.71	-63.28	100.21	1.87	0.63	-7.81
8,870.00	13.10	310.00	8,853.01	81.17	-65.00	102.47	1.87	0.65	-7.73
8,880.00	13.04	310.06	8,862.75	82.62	-66.73	104.73	0.64	-0.63	0.62
8,890.00	12.97	310.12	8,872.50	84.07	-68.45	106.98	0.64	-0.63	0.62
8,900.00	12.91	310.19	8,882.24	85.52	-70.17	109.22	0.64	-0.62	0.63
8,910.00	12.87	310.33	8,891.99	86.96	-71.87	111.45	0.50	-0.38	1.41
8,920.00	12.84	310.49	8,901.74	88.40	-73.56	113.67	0.48	-0.32	1.61
8,930.00	12.81	310.65	8,911.49	89.85	-75.25	115.89	0.48	-0.32	1.62
8,940.00	12.89	310.45	8,921.24	91.29	-76.93	118.11	0.92	0.80	-2.06
8,950.00	13.02	310.09	8,930.99	92.74	-78.65	120.35	1.52	1.29	-3.57
8,960.00	13.15	309.74	8,940.73	94.19	-80.38	122.62	1.52	1.29	-3.50
8,970.00	13.20	309.60	8,950.46	95.65	-82.14	124.90	0.61	0.52	-1.38
8,980.00	13.20	309.60	8,960.20	97.10	-83.90	127.18	0.00	0.00	0.00
8,990.00	13.20	309.60	8,969.93	98.56	-85.66	129.46	0.00	0.00	0.00
9,000.00	13.15	309.58	8,979.67	100.01	-87.42	131.74	0.50	-0.50	-0.24
9,010.00	13.02	309.51	8,989.41	101.46	-89.16	134.01	1.26	-1.25	-0.62
9,020.00	12.90	309.45	8,999.16	102.88	-90.89	136.25	1.26	-1.25	-0.63
9,030.00	12.76	309.44	9,008.91	104.29	-92.61	138.47	1.38	-1.38	-0.15
9,040.00	12.57	309.62	9,018.66	105.69	-94.30	140.66	1.92	-1.88	1.83
9,050.00	12.39	309.81	9,028.43	107.07	-95.96	142.82	1.92	-1.87	1.88
9,060.00	12.20	310.00	9,038.20	108.44	-97.60	144.95	1.92	-1.87	1.94
9,070.00	12.04	310.52	9,047.97	109.79	-99.20	147.05	1.91	-1.57	5.16
9,080.00	11.89	311.05	9,057.76	111.15	-100.77	149.12	1.91	-1.56	5.30
9,090.00	11.73	311.59	9,067.54	112.50	-102.31	151.17	1.91	-1.55	5.44
9,100.00	11.72	311.26	9,077.34	113.84	-103.83	153.20	0.68	-0.06	-3.31
9,110.00	11.76	310.71	9,087.13	115.18	-105.36	155.23	1.16	0.32	-5.49
9,120.00	11.79	310.16	9,096.92	116.50	-106.92	157.27	1.16	0.33	-5.46
9,130.00	11.78	310.02	9,106.71	117.82	-108.48	159.31	0.31	-0.12	-1.41
9,140.00	11.75	310.05	9,116.50	119.13	-110.04	161.35	0.33	-0.32	0.32
9,150.00	11.71	310.09	9,126.29	120.44	-111.60	163.38	0.33	-0.32	0.32
9,160.00	11.64	309.95	9,136.08	121.74	-113.15	165.41	0.74	-0.69	-1.34
9,170.00	11.55	309.71	9,145.88	123.03	-114.69	167.42	1.06	-0.94	-2.48
9,180.00	11.46	309.45	9,155.67	124.30	-116.23	169.41	1.06	-0.94	-2.52
9,190.00	11.37	309.24	9,165.48	125.55	-117.76	171.39	0.92	-0.81	-2.15
9,200.00	11.31	309.08	9,175.28	126.79	-119.28	173.35	0.70	-0.63	-1.55
9,210.00	11.25	308.93	9,185.09	128.02	-120.80	175.31	0.70	-0.62	-1.57
9,220.00	11.19	308.78	9,194.90	129.24	-122.32	177.25	0.69	-0.62	-1.51
9,230.00	11.12	308.65	9,204.71	130.45	-123.83	179.18	0.67	-0.63	-1.24
9,240.00	11.06	308.53	9,214.52	131.65	-125.33	181.11	0.67	-0.62	-1.25
9,250.00	11.00	308.40	9,224.34	132.84	-126.83	183.02	0.67	-0.62	-1.27
9,260.00	11.00	308.37	9,234.15	134.03	-128.33	184.92	0.06	0.00	-0.31
9,270.00	11.00	308.34	9,243.97	135.21	-129.82	186.83	0.06	0.00	-0.31
9,280.00	11.00	308.31	9,253.79	136.40	-131.32	188.73	0.06	0.00	-0.31
9,290.00	11.00	308.30	9,263.60	137.58	-132.82	190.64	0.01	0.00	-0.06
9,300.00	11.00	308.30	9,273.42	138.76	-134.31	192.54	0.00	0.00	0.00
9,310.00	11.00	308.30	9,283.23	139.94	-135.81	194.45	0.00	0.00	0.00
9,320.00	11.02	308.59	9,293.05	141.13	-137.31	196.35	0.59	0.21	2.86
9,330.00	11.05	308.99	9,302.87	142.33	-138.80	198.27	0.84	0.31	4.07
9,340.00	11.08	309.40	9,312.68	143.54	-140.29	200.18	0.84	0.32	4.05

Black Viper Energy Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3595.00ft (Original Well Elev)
SIG:	New Sheriff #10 Fed 1	MD Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Database:	S-Well #1	Database:	EDM 2003.14 Server Db

Measured Depth (ft)	Inclination (°)	Vertical Depth (ft)	True Vertical Depth (ft)	EN/AS (ft)	True ELEV (ft)	Vertical Section (ft)	Drift Rate (ft/100ft)	Swath Rate (ft/100ft)	Run Rate (ft/100ft)
9,350.00	11.07	309.77	9,322.49	144.77	-141.77	202.11	0.73	-0.16	3.71
9,360.00	11.01	310.11	9,332.31	146.00	-143.24	204.02	0.91	-0.63	3.41
9,370.00	10.94	310.46	9,342.12	147.23	-144.69	205.92	0.91	-0.62	3.45
9,380.00	10.90	310.60	9,351.94	148.46	-146.13	207.82	0.51	-0.44	1.41
9,390.00	10.90	310.25	9,361.76	149.69	-147.57	209.71	0.65	0.00	-3.44
9,400.00	10.90	309.91	9,371.58	150.90	-149.01	211.60	0.65	0.00	-3.44
9,410.00	10.91	309.66	9,381.40	152.11	-150.47	213.49	0.48	0.10	-2.46
9,420.00	11.01	310.29	9,391.22	153.33	-151.92	215.39	1.52	0.96	6.23
9,430.00	11.10	310.90	9,401.04	154.58	-153.38	217.30	1.52	0.97	6.12
9,440.00	11.20	311.50	9,410.85	155.86	-154.84	219.24	1.52	0.98	6.02
9,450.00	11.23	312.19	9,420.66	157.15	-156.28	221.18	1.38	0.30	6.92
9,460.00	11.26	312.88	9,430.46	158.47	-157.72	223.13	1.38	0.31	6.88
9,470.00	11.29	313.56	9,440.27	159.81	-159.15	225.09	1.38	0.33	6.84
9,480.00	11.32	313.57	9,450.08	161.16	-160.57	227.05	0.32	0.32	0.11
9,490.00	11.36	313.42	9,459.88	162.52	-161.99	229.01	0.44	0.31	-1.57
9,500.00	11.39	313.26	9,469.68	163.87	-163.43	230.98	0.44	0.31	-1.56
9,510.00	11.45	312.66	9,479.49	165.22	-164.87	232.96	1.36	0.67	-5.98
9,520.00	11.55	311.78	9,489.29	166.56	-166.35	234.96	1.99	0.92	-8.82
9,530.00	11.64	310.91	9,499.08	167.89	-167.86	236.96	1.99	0.95	-8.68
9,540.00	11.69	310.33	9,508.87	169.21	-169.40	238.99	1.27	0.46	-5.89
9,550.00	11.66	310.14	9,518.67	170.51	-170.94	241.01	0.49	-0.31	-1.87
9,560.00	11.62	309.95	9,528.46	171.81	-172.49	243.03	0.49	-0.31	-1.88
9,570.00	11.57	309.81	9,538.26	173.10	-174.03	245.04	0.63	-0.56	-1.39
9,580.00	11.41	309.87	9,548.06	174.38	-175.56	247.03	1.57	-1.56	0.61
9,590.00	11.26	309.94	9,557.86	175.64	-177.07	249.00	1.57	-1.56	0.63
9,600.00	11.10	310.00	9,567.67	176.88	-178.55	250.93	1.57	-1.56	0.64
9,610.00	11.07	310.00	9,577.49	178.12	-180.03	252.86	0.31	-0.31	0.00
9,620.00	11.04	310.00	9,587.30	179.35	-181.49	254.77	0.31	-0.31	0.00
9,630.00	11.01	310.00	9,597.12	180.58	-182.96	256.68	0.31	-0.31	0.00
9,640.00	10.97	309.48	9,606.93	181.80	-184.42	258.59	1.05	-0.33	-5.21
9,650.00	10.94	308.82	9,616.75	183.00	-185.90	260.49	1.29	-0.32	-6.55
9,660.00	10.91	308.16	9,626.57	184.18	-187.38	262.38	1.29	-0.30	-6.59
9,670.00	10.86	308.00	9,636.39	185.34	-188.87	264.27	0.60	-0.50	-1.69
9,680.00	10.80	308.16	9,646.21	186.50	-190.35	266.14	0.71	-0.65	1.60
9,690.00	10.73	308.32	9,656.04	187.66	-191.82	268.01	0.71	-0.64	1.62
9,700.00	10.68	308.46	9,665.86	188.81	-193.27	269.86	0.55	-0.48	1.44
9,710.00	10.65	308.59	9,675.69	189.96	-194.72	271.71	0.39	-0.31	1.25
9,720.00	10.62	308.71	9,685.52	191.12	-196.16	273.55	0.39	-0.31	1.25
9,730.00	10.60	308.66	9,695.35	192.27	-197.60	275.39	0.24	-0.22	-0.52
9,740.00	10.60	308.19	9,705.17	193.41	-199.04	277.23	0.86	-0.01	-4.69
9,750.00	10.60	307.72	9,715.00	194.54	-200.49	279.06	0.86	0.00	-4.69
9,760.00	10.59	307.29	9,724.83	195.66	-201.95	280.90	0.79	-0.06	-4.28
9,770.00	10.53	307.23	9,734.66	196.77	-203.41	282.73	0.66	-0.65	-0.64
9,780.00	10.46	307.17	9,744.50	197.87	-204.86	284.54	0.66	-0.65	-0.65
9,790.00	10.40	307.10	9,754.33	198.97	-206.30	286.35	0.66	-0.65	-0.65
9,800.00	10.27	307.10	9,764.17	200.05	-207.73	288.14	1.25	-1.25	0.00
9,810.00	10.15	307.10	9,774.01	201.12	-209.15	289.91	1.25	-1.25	0.00
9,820.00	10.03	307.10	9,783.86	202.17	-210.54	291.65	1.25	-1.25	0.00
9,830.00	9.85	307.05	9,793.71	203.22	-211.92	293.37	1.75	-1.75	-0.48
9,840.00	9.66	306.99	9,803.56	204.24	-213.27	295.06	1.88	-1.88	-0.62
9,850.00	9.47	306.93	9,813.42	205.24	-214.60	296.72	1.88	-1.87	-0.64
9,860.00	9.34	306.72	9,823.29	206.21	-215.91	298.35	1.36	-1.31	-2.09
9,870.00	9.25	306.41	9,833.16	207.18	-217.21	299.96	1.06	-0.94	-3.09
9,880.00	9.16	306.09	9,843.03	208.12	-218.50	301.55	1.06	-0.94	-3.16

Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site: New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3595.00ft (Original Well Elev)
Site:	New Sheriff #10 Fed 1	MD Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Design:	S-Well #1	Database:	EDM 2003.14 Server Db

Measured Depth (ft)	Interval (ft)	True Vertical (ft)	Depth (ft)	ANAS (ft)	RAW (ft)	Vertical Section (ft)	Dogleg Angle (deg)	Build Rate (ft/100ft)	Turn Rate (°/100ft)
9,890.00	9.09	306.36	9,852.90	209.06	-219.78	303.13	0.82	-0.71	2.65
9,900.00	9.05	307.51	9,862.78	210.00	-221.04	304.70	1.85	-0.34	11.51
9,910.00	9.02	308.67	9,872.65	210.97	-222.27	306.27	1.85	-0.30	11.59
9,920.00	9.01	309.65	9,882.53	211.96	-223.49	307.83	1.54	-0.09	9.82
9,930.00	9.07	309.89	9,892.40	212.97	-224.69	309.40	0.72	0.60	2.45
9,940.00	9.13	310.14	9,902.28	213.98	-225.91	310.98	0.72	0.61	2.42
9,950.00	9.19	310.38	9,912.15	215.01	-227.12	312.58	0.72	0.61	2.39
9,960.00	9.23	310.66	9,922.02	216.05	-228.34	314.18	0.58	0.35	2.87
9,970.00	9.26	310.95	9,931.89	217.10	-229.55	315.78	0.57	0.32	2.91
9,980.00	9.29	311.24	9,941.76	218.16	-230.77	317.40	0.57	0.32	2.89
9,990.00	9.22	311.69	9,951.63	219.23	-231.98	319.01	1.00	-0.69	4.48
10,000.00	9.13	312.19	9,961.50	220.30	-233.16	320.60	1.23	-0.94	4.97
10,010.00	9.04	312.69	9,971.38	221.36	-234.33	322.18	1.23	-0.93	5.07
10,020.00	9.02	312.92	9,981.25	222.43	-235.48	323.75	0.40	-0.18	2.25
10,030.00	9.05	312.95	9,991.13	223.50	-236.63	325.32	0.32	0.31	0.31
10,040.00	9.08	312.98	10,001.01	224.57	-237.78	326.89	0.32	0.31	0.31
10,050.00	9.14	312.81	10,010.88	225.65	-238.94	328.47	0.62	0.56	-1.74
10,060.00	9.23	312.33	10,020.75	226.73	-240.11	330.07	1.20	0.93	-4.75
10,070.00	9.32	311.87	10,030.62	227.81	-241.31	331.68	1.20	0.94	-4.66
10,080.00	9.45	311.58	10,040.49	228.89	-242.53	333.31	1.34	1.25	-2.85
10,090.00	9.70	311.97	10,050.35	230.00	-243.77	334.97	2.58	2.50	3.92
10,100.00	9.95	312.35	10,060.20	231.14	-245.03	336.68	2.58	2.50	3.73
10,110.00	10.20	312.70	10,070.05	232.33	-246.32	338.43	2.58	2.50	3.54
10,120.00	10.11	312.52	10,079.89	233.52	-247.62	340.19	0.99	-0.94	-1.84
10,130.00	10.01	312.33	10,089.74	234.70	-248.91	341.94	0.99	-0.94	-1.87
10,140.00	9.92	312.14	10,099.59	235.86	-250.19	343.67	0.99	-0.94	-1.91
10,150.00	9.77	312.32	10,109.44	237.01	-251.46	345.38	1.51	-1.48	1.85
10,160.00	9.61	312.61	10,119.30	238.15	-252.70	347.06	1.68	-1.61	2.88
10,170.00	9.45	312.91	10,129.16	239.27	-253.91	348.71	1.68	-1.61	2.97
10,180.00	9.45	312.81	10,139.02	240.39	-255.11	350.35	0.16	-0.02	-0.98
10,190.00	9.51	312.54	10,148.89	241.50	-256.32	352.00	0.80	0.67	-2.68
10,200.00	9.58	312.28	10,158.75	242.62	-257.55	353.66	0.80	0.67	-2.64
10,210.00	9.56	312.09	10,168.61	243.74	-258.78	355.32	0.39	-0.24	-1.86
10,220.00	9.49	311.94	10,178.47	244.85	-260.01	356.98	0.68	-0.63	-1.55
10,230.00	9.43	311.78	10,188.33	245.94	-261.23	358.62	0.68	-0.62	-1.57
10,240.00	9.48	311.83	10,198.20	247.03	-262.46	360.26	0.48	0.47	0.51
10,250.00	9.63	312.09	10,208.06	248.14	-263.69	361.92	1.62	1.56	2.55
10,260.00	9.79	312.33	10,217.92	249.28	-264.94	363.60	1.62	1.56	2.47
10,270.00	9.93	312.52	10,227.77	250.43	-266.20	365.32	1.41	1.38	1.87
10,280.00	10.02	312.58	10,237.62	251.60	-267.48	367.05	0.94	0.94	0.63
10,290.00	10.12	312.64	10,247.46	252.79	-268.77	368.80	0.94	0.94	0.62
10,300.00	10.22	312.71	10,257.31	253.98	-270.06	370.56	1.01	1.00	0.68
10,310.00	10.37	312.84	10,267.15	255.20	-271.38	372.35	1.58	1.56	1.29
10,320.00	10.53	312.97	10,276.98	256.43	-272.70	374.16	1.58	1.56	1.25
10,330.00	10.68	313.09	10,286.81	257.69	-274.05	376.00	1.58	1.56	1.21
10,340.00	10.70	312.68	10,296.64	258.95	-275.41	377.86	0.77	0.15	-4.10
10,350.00	10.70	312.21	10,306.46	260.21	-276.78	379.71	0.87	0.00	-4.69
10,360.00	10.70	311.74	10,316.29	261.45	-278.16	381.57	0.87	0.01	-4.69
10,370.00	10.74	311.33	10,326.11	262.68	-279.55	383.43	0.87	0.44	-4.07
10,380.00	10.81	310.96	10,335.94	263.91	-280.96	385.30	0.94	0.62	-3.77
10,390.00	10.87	310.58	10,345.76	265.14	-282.38	387.18	0.94	0.63	-3.72
10,400.00	10.92	310.32	10,355.58	266.36	-283.82	389.07	0.69	0.48	-2.66
10,410.00	10.95	310.16	10,365.40	267.59	-285.27	390.96	0.44	0.32	-1.62
10,420.00	10.98	310.00	10,375.21	268.81	-286.73	392.87	0.44	0.32	-1.61
10,430.00	10.90	310.10	10,385.03	270.04	-288.18	394.77	0.83	-0.81	1.03

Black Viper Energy

Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	AMS (ft)	RAW (ft)	Vertical Section (ft)	Depth (ft)	Rate (ft/100ft)	Rate (ft/100ft)
10,440.00	10.65	310.61	10,394.86	271.25	-289.61	396.64	2.68	-2.51	5.14
10,450.00	10.40	311.15	10,404.69	272.44	-290.99	398.46	2.68	-2.50	5.38
10,460.00	10.17	311.58	10,414.53	273.62	-292.33	400.25	2.43	-2.30	4.31
10,470.00	10.01	311.49	10,424.37	274.78	-293.64	402.00	1.57	-1.56	-0.91
10,480.00	9.86	311.40	10,434.22	275.93	-294.93	403.73	1.57	-1.56	-0.94
10,490.00	9.70	311.30	10,444.08	277.05	-296.21	405.42	1.57	-1.56	-0.97
10,500.00	9.64	311.24	10,453.93	278.16	-297.47	407.10	0.63	-0.63	-0.62
10,510.00	9.57	311.18	10,463.79	279.25	-298.73	408.77	0.63	-0.63	-0.62
10,520.00	9.51	311.11	10,473.66	280.35	-299.97	410.43	0.63	-0.62	-0.63
10,530.00	9.55	310.79	10,483.52	281.43	-301.22	412.08	0.67	0.39	-3.27
10,540.00	9.62	310.40	10,493.38	282.51	-302.49	413.75	0.91	0.64	-3.88
10,550.00	9.68	310.01	10,503.24	283.60	-303.77	415.42	0.91	0.65	-3.83
10,560.00	9.74	310.12	10,513.09	284.68	-305.06	417.11	0.66	0.63	1.08
10,570.00	9.81	310.44	10,522.95	285.78	-306.35	418.81	0.82	0.62	3.14
10,580.00	9.87	310.75	10,532.80	286.89	-307.65	420.52	0.82	0.63	3.10
10,590.00	9.90	310.92	10,542.65	288.01	-308.95	422.23	0.43	0.31	1.69
10,600.00	9.90	310.95	10,552.50	289.14	-310.25	423.95	0.05	0.00	0.31
10,610.00	9.90	310.98	10,562.36	290.27	-311.55	425.67	0.05	0.00	0.31
10,620.00	9.96	310.95	10,572.21	291.39	-312.85	427.39	0.56	0.56	-0.28
10,630.00	10.14	310.79	10,582.05	292.54	-314.17	429.14	1.90	1.87	-1.61
10,640.00	10.33	310.63	10,591.89	293.70	-315.51	430.92	1.90	1.88	-1.55
10,650.00	10.48	310.45	10,601.73	294.87	-316.89	432.72	1.56	1.53	-1.84
10,660.00	10.32	309.95	10,611.56	296.04	-318.27	434.53	1.86	-1.62	-5.01
10,670.00	10.16	309.43	10,621.40	297.17	-319.64	436.31	1.86	-1.61	-5.17
10,680.00	10.00	308.90	10,631.25	298.28	-320.99	438.06	1.86	-1.60	-5.33
10,690.00	10.03	308.40	10,641.10	299.36	-322.35	439.79	0.93	0.30	-5.03
10,700.00	10.06	307.90	10,650.94	300.44	-323.72	441.53	0.93	0.31	-5.00
10,710.00	10.09	307.40	10,660.79	301.51	-325.11	443.28	0.93	0.32	-4.97
10,720.00	10.25	307.33	10,670.63	302.58	-326.51	445.04	1.57	1.56	-0.73
10,730.00	10.44	307.36	10,680.47	303.67	-327.94	446.83	1.88	1.87	0.32
10,740.00	10.62	307.39	10,690.30	304.78	-329.39	448.65	1.88	1.88	0.30
10,750.00	10.75	308.13	10,700.13	305.91	-330.86	450.50	1.89	1.30	7.44
10,760.00	10.85	309.33	10,709.95	307.09	-332.32	452.38	2.45	0.95	12.03
10,770.00	10.95	310.52	10,719.77	308.30	-333.77	454.27	2.45	0.99	11.82
10,780.00	10.92	311.33	10,729.59	309.55	-335.21	456.17	1.57	-0.28	8.12
10,790.00	10.76	311.80	10,739.41	310.79	-336.62	458.05	1.81	-1.58	4.68
10,800.00	10.61	312.28	10,749.24	312.04	-337.99	459.90	1.81	-1.57	4.82
10,810.00	10.45	312.78	10,759.07	313.27	-339.34	461.73	1.81	-1.56	4.96
10,820.00	10.29	313.29	10,768.90	314.50	-340.66	463.53	1.81	-1.56	5.11
10,830.00	10.14	313.81	10,778.75	315.72	-341.94	465.30	1.81	-1.55	5.26
10,840.00	10.00	314.35	10,788.59	316.94	-343.20	467.05	1.70	-1.42	5.34
10,850.00	9.96	314.81	10,798.44	318.15	-344.43	468.78	0.87	-0.32	4.66
10,860.00	9.93	315.28	10,808.29	319.38	-345.65	470.50	0.87	-0.31	4.69
10,870.00	9.90	315.75	10,818.14	320.61	-346.86	472.22	0.87	-0.31	4.72
10,880.00	9.93	315.23	10,827.99	321.83	-348.06	473.94	0.93	0.24	-5.19
10,890.00	9.96	314.61	10,837.84	323.05	-349.29	475.66	1.12	0.31	-6.26
10,900.00	9.99	313.99	10,847.69	324.26	-350.53	477.39	1.12	0.32	-6.22
10,910.00	9.98	313.56	10,857.54	325.46	-351.78	479.13	0.75	-0.12	-4.25
10,920.00	9.95	313.22	10,867.39	326.65	-353.04	480.85	0.67	-0.31	-3.43
10,930.00	9.92	312.87	10,877.24	327.83	-354.30	482.58	0.67	-0.31	-3.45
10,940.00	9.93	312.80	10,887.09	329.00	-355.56	484.30	0.21	0.16	-0.78
10,950.00	9.99	312.98	10,896.94	330.17	-356.83	486.03	0.70	0.62	1.89
10,960.00	10.06	313.17	10,906.79	331.36	-358.10	487.77	0.70	0.63	1.87
10,970.00	10.06	312.91	10,916.63	332.56	-359.38	489.52	0.46	0.03	-2.63
10,980.00	9.93	311.58	10,926.48	333.73	-360.66	491.25	2.66	-1.33	-13.29

Black Viper Energy

Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

Station Elev (ft)	Depth (ft)	Depth (ft)	Depth (ft)	N/S (ft)	E/W (ft)	Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)
10,990.00	9.80	310.22	10,936.33	334.85	-361.95	492.97	2.66	-1.28	-13.64
11,000.00	9.69	309.18	10,946.19	335.93	-363.26	494.66	2.05	-1.05	-10.39
11,010.00	9.66	309.56	10,956.05	336.99	-364.56	496.34	0.72	-0.33	3.85
11,020.00	9.63	309.95	10,965.90	338.06	-365.85	498.01	0.72	-0.32	3.87
11,030.00	9.60	310.23	10,975.76	339.14	-367.12	499.68	0.56	-0.32	2.77
11,040.00	9.56	309.48	10,985.62	340.21	-368.40	501.34	1.28	-0.33	-7.45
11,050.00	9.53	308.73	10,995.49	341.25	-369.69	503.00	1.28	-0.31	-7.50
11,060.00	9.50	307.98	11,005.35	342.28	-370.98	504.65	1.28	-0.30	-7.55
11,070.00	9.53	307.45	11,015.21	343.29	-372.29	506.30	0.91	0.25	-5.29
11,080.00	9.56	306.95	11,025.07	344.29	-373.61	507.95	0.89	0.31	-5.01
11,090.00	9.59	306.45	11,034.93	345.29	-374.95	509.61	0.89	0.32	-4.97
11,100.00	9.53	306.49	11,044.79	346.27	-376.29	511.27	0.57	-0.56	0.43
11,110.00	9.44	306.77	11,054.66	347.26	-377.61	512.91	1.05	-0.94	2.79
11,120.00	9.35	307.06	11,064.52	348.24	-378.91	514.54	1.05	-0.94	2.85
11,130.00	9.20	306.80	11,074.39	349.21	-380.20	516.15	1.48	-1.42	-2.54
11,140.00	9.02	305.98	11,084.27	350.15	-381.48	517.72	2.29	-1.89	-8.22
11,150.00	8.83	305.12	11,094.14	351.05	-382.74	519.27	2.29	-1.87	-8.57
11,160.00	8.64	304.27	11,104.03	351.91	-383.99	520.77	2.28	-1.88	-8.48
11,170.00	8.45	303.49	11,113.92	352.74	-385.22	522.25	2.27	-1.95	-7.79
11,180.00	8.25	302.68	11,123.81	353.54	-386.44	523.68	2.27	-1.93	-8.15
11,190.00	8.12	302.05	11,133.71	354.29	-387.64	525.09	1.62	-1.35	-6.28
11,200.00	8.21	302.31	11,143.61	355.05	-388.84	526.49	1.00	0.94	2.55
11,210.00	8.31	302.56	11,153.51	355.82	-390.05	527.91	1.00	0.94	2.49
11,220.00	8.40	302.80	11,163.40	356.61	-391.27	529.34	1.00	0.94	2.44
11,230.00	8.30	304.02	11,173.29	357.40	-392.49	530.78	2.02	-0.98	12.19
11,240.00	8.21	305.27	11,183.19	358.22	-393.67	532.20	2.02	-0.94	12.47
11,250.00	8.12	306.54	11,193.09	359.05	-394.82	533.62	2.02	-0.90	12.75
11,260.00	7.97	306.09	11,202.99	359.89	-395.94	535.01	1.58	-1.45	-4.56
11,270.00	7.82	305.16	11,212.89	360.69	-397.06	536.38	2.02	-1.57	-9.26
11,280.00	7.66	304.20	11,222.80	361.45	-398.17	537.72	2.02	-1.55	-9.63
11,290.00	7.56	303.84	11,232.72	362.19	-399.27	539.03	1.10	-0.99	-3.59
11,300.00	7.50	303.90	11,242.63	362.92	-400.35	540.33	0.63	-0.63	0.62
11,310.00	7.44	303.96	11,252.54	363.65	-401.43	541.61	0.63	-0.62	0.63
11,320.00	7.31	303.87	11,262.46	364.37	-402.50	542.89	1.26	-1.25	-0.88
11,330.00	7.09	303.55	11,272.38	365.06	-403.54	544.13	2.23	-2.19	-3.29
11,340.00	6.87	303.20	11,282.31	365.73	-404.56	545.34	2.23	-2.19	-3.49
11,350.00	6.71	302.69	11,292.24	366.37	-405.55	546.50	1.74	-1.63	-5.08
11,360.00	6.77	301.64	11,302.17	367.00	-406.54	547.66	1.37	0.61	-10.48
11,370.00	6.84	300.61	11,312.10	367.61	-407.55	548.83	1.37	0.63	-10.29
11,380.00	6.90	299.60	11,322.03	368.21	-408.59	550.00	1.37	0.65	-10.10
11,390.00	6.87	299.63	11,331.96	368.80	-409.63	551.17	0.31	-0.31	0.31
11,400.00	6.84	299.66	11,341.88	369.39	-410.67	552.34	0.31	-0.31	0.31
11,410.00	6.81	299.69	11,351.81	369.98	-411.70	553.50	0.31	-0.31	0.32
11,420.00	6.85	299.41	11,361.74	370.57	-412.73	554.66	0.56	0.45	-2.84
11,430.00	6.92	299.05	11,371.67	371.15	-413.78	555.83	0.77	0.64	-3.56
11,440.00	6.98	298.70	11,381.60	371.74	-414.84	557.01	0.77	0.65	-3.50
11,450.00	6.82	298.56	11,391.52	372.31	-415.90	558.19	1.56	-1.56	-1.43
11,460.00	6.57	298.50	11,401.46	372.87	-416.92	559.33	2.50	-2.50	-0.60
11,470.00	6.32	298.43	11,411.39	373.41	-417.91	560.42	2.50	-2.50	-0.65
11,480.00	6.11	298.50	11,421.33	373.92	-418.86	561.48	2.19	-2.19	0.66
11,490.00	5.92	298.71	11,431.28	374.42	-419.78	562.50	1.89	-1.88	2.10
11,500.00	5.73	298.93	11,441.23	374.91	-420.67	563.49	1.89	-1.87	2.24
11,510.00	5.54	299.35	11,451.18	375.39	-421.53	564.45	1.92	-1.88	4.19
11,520.00	5.35	300.24	11,461.13	375.86	-422.35	565.38	2.06	-1.89	8.84
11,530.00	5.17	301.19	11,471.09	376.33	-423.14	566.28	2.06	-1.87	9.48

Black Viper Energy

Survey Report



Company:	Cimarex Energy Co., Inc.	Local Co-ordinate Reference:	Site New Sheriff #10 Fed 1
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3595.00ft (Original Well Elev)
Site:	New Sheriff #10 Fed 1	MB Reference:	WELL @ 3595.00ft (Original Well Elev)
Well:	New Sheriff #10 Fed 1	North Reference:	True
Wellbore:	S-Well #1	Survey Calculation Method:	Minimum Curvature
Section:	S-Well #1	Database:	EDM 2003.14 Server Db

Measured Depth (ft)	Inclination (°)	Depth (ft)	Vertical Depth (ft)	N-S (ft)	E-W (ft)	Section (ft)	Depth (ft)	Depth (ft)	Rate (ft)
11,540.00	4.98	302.12	11,481.05	376.79	-423.89	567.15	2.07	-1.89	9.38
11,550.00	4.76	302.38	11,491.02	377.25	-424.61	567.99	2.20	-2.19	2.55
11,560.00	4.54	302.66	11,500.98	377.68	-425.30	568.79	2.20	-2.19	2.80
11,570.00	4.32	302.97	11,510.95	378.10	-425.94	569.55	2.20	-2.19	3.08
11,580.00	4.21	302.09	11,520.93	378.50	-426.57	570.29	1.26	-1.08	-8.75
11,590.00	4.12	301.04	11,530.90	378.88	-427.19	571.00	1.21	-0.94	-10.52
11,600.00	4.03	299.94	11,540.87	379.24	-427.80	571.70	1.21	-0.93	-11.01
11,610.00	3.82	297.99	11,550.85	379.58	-428.40	572.37	2.48	-2.09	-19.48
11,620.00	3.56	295.42	11,560.83	379.87	-428.98	572.99	3.03	-2.54	-25.77
11,630.00	3.32	292.45	11,570.81	380.11	-429.53	573.56	3.03	-2.45	-29.65
11,640.00	3.04	290.15	11,580.80	380.31	-430.04	574.09	3.05	-2.77	-23.05
11,650.00	2.73	288.61	11,590.78	380.48	-430.52	574.55	3.24	-3.14	-15.35
11,660.00	2.42	286.68	11,600.77	380.61	-430.95	574.96	3.24	-3.12	-19.33
11,670.00	2.12	284.18	11,610.76	380.72	-431.33	575.32	3.11	-2.95	-24.99
11,680.00	1.86	280.95	11,620.76	380.80	-431.67	575.62	2.81	-2.57	-32.33
11,690.00	1.61	276.69	11,630.75	380.84	-431.97	575.88	2.81	-2.50	-42.50
11,700.00	1.39	271.41	11,640.75	380.86	-432.23	576.09	2.66	-2.27	-52.84
11,710.00	1.26	269.32	11,650.75	380.86	-432.46	576.26	1.36	-1.27	-20.96
11,720.00	1.13	266.75	11,660.75	380.86	-432.67	576.41	1.36	-1.25	-25.63
11,730.00	1.01	263.56	11,670.74	380.84	-432.85	576.54	1.36	-1.22	-31.91
11,740.00	0.86	261.23	11,680.74	380.82	-433.01	576.65	1.60	-1.55	-23.34
11,750.00	0.70	258.09	11,690.74	380.80	-433.15	576.73	1.63	-1.57	-31.34
11,760.00	0.55	253.17	11,700.74	380.77	-433.25	576.79	1.63	-1.54	-49.29
11,770.00	0.41	252.96	11,710.74	380.74	-433.33	576.83	1.37	-1.37	-2.09
11,780.00	0.28	257.72	11,720.74	380.73	-433.39	576.87	1.33	-1.30	47.65
11,790.00	0.15	270.44	11,730.74	380.72	-433.43	576.89	1.33	-1.25	127.20
11,800.00	0.08	309.98	11,740.74	380.73	-433.45	576.91	1.05	-0.73	395.42
11,810.00	0.09	2.89	11,750.74	380.74	-433.45	576.92	0.78	0.12	529.04
11,820.00	0.15	28.07	11,760.74	380.76	-433.44	576.93	0.78	0.58	251.82
11,830.00	0.18	36.00	11,770.74	380.79	-433.43	576.93	0.38	0.30	79.30
11,840.00	0.12	36.00	11,780.74	380.81	-433.41	576.94	0.63	-0.63	0.00
11,850.00	0.06	36.00	11,790.74	380.82	-433.40	576.94	0.63	-0.63	0.00
11,860.00	0.01	41.40	11,800.74	380.82	-433.40	576.94	0.47	-0.47	54.00
11,870.00	0.10	41.40	11,810.74	380.83	-433.39	576.94	0.94	0.94	0.00
11,880.00	0.20	41.40	11,820.74	380.85	-433.38	576.94	0.94	0.94	0.00
11,890.00	0.29	41.40	11,830.74	380.88	-433.35	576.94	0.94	0.94	0.00
11,900.00	0.23	47.65	11,840.74	380.92	-433.31	576.94	0.67	-0.61	62.55
11,910.00	0.16	60.94	11,850.74	380.94	-433.29	576.93	0.84	-0.72	132.86
11,920.00	0.11	90.69	11,860.74	380.94	-433.27	576.92	0.84	-0.52	297.52
11,930.00	0.10	104.30	11,870.74	380.94	-433.25	576.90	0.25	-0.06	136.07
11,940.00	0.10	104.30	11,880.74	380.93	-433.23	576.89	0.00	0.00	0.00
11,950.00	0.10	104.30	11,890.74	380.93	-433.22	576.87	0.00	0.00	0.00
11,960.00	0.10	104.30	11,900.74	380.93	-433.20	576.86	0.00	0.00	0.00
11,970.00	0.10	103.27	11,910.74	380.92	-433.18	576.84	0.02	0.00	-10.28
11,980.00	0.10	103.05	11,920.74	380.92	-433.16	576.83	0.00	0.00	-2.19
11,990.00	0.10	102.83	11,930.74	380.91	-433.15	576.81	0.00	0.00	-2.19
12,000.00	0.10	102.62	11,940.74	380.91	-433.13	576.79	0.00	0.00	-2.19
12,010.00	0.10	102.40	11,950.74	380.91	-433.11	576.78	0.00	0.00	-2.19
12,020.00	0.11	107.63	11,960.74	380.90	-433.10	576.76	0.11	0.07	52.38
12,030.00	0.20	135.90	11,970.74	380.89	-433.08	576.74	1.18	0.93	282.65
Last MWD Survey									
12,040.00	0.20	135.90	11,980.74	380.86	-433.05	576.70	0.00	0.00	0.00
12,050.00	0.20	135.90	11,990.74	380.84	-433.03	576.67	0.00	0.00	0.00
12,060.00	0.20	135.90	12,000.74	380.81	-433.00	576.63	0.00	0.00	0.00

Black Viper Energy!

Survey Report



Company	Cimarex Energy Co., Inc.	Local Co-ordinate Reference	Site New Sheriff #10 Fed 1
Project	Lea County (NAD 83)	TVD Reference	WELL @ 3595.00ft (Original Well Elev)
Site	New Sheriff #10 Fed 1	MD Reference	WELL @ 3595.00ft (Original Well Elev)
Well	New Sheriff #10 Fed 1	North Reference	True
Wellbore	S-Well #1	Survey Calculation Method	Minimum Curvature
Design	S-Well #1	Database	EDM 2003.14 Server Db

Measured Depth (ft)	Inclination (°)	True Depth (ft)	Vertical Depth (ft)	N/S (ft)	E/W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	True Rate (°/100ft)	True Rate (°/100ft)
12,070.00	0.20	135.90	12,010.74	380.79	-432.98	576.60	0.00	0.00	0.00
12,074.00	0.20	135.90	12,014.74	380.78	-432.97	576.59	0.00	0.00	0.00
Proj. to Bit									

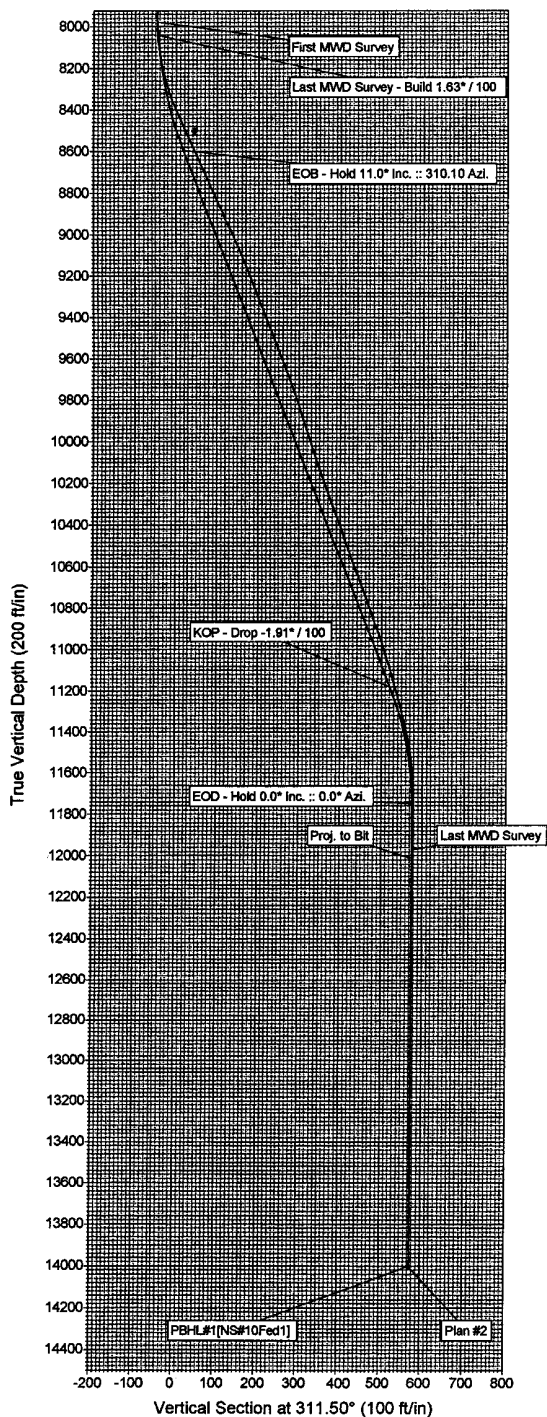
Station	Measure	Depth (ft)	TVD (ft)	N/S (ft)	E/W (ft)	Horizontal (ft)	Vertical (ft)	Angle (°)	Angle (°)
x1		0.00	0.00	8,500.00	28.82	-32.61	576,262.55	712,196.74	32° 34' 58.700 N 103° 46' 43.043 W
- actual wellpath rises by 2888ft @ 852.75ft MD (804.72 TVD 8.07 N-4.14 E)									
- Bint									
PBHL#1[NS#10Fed1]		0.00	0.00	14,000.00	380.00	-430.00	576,611.65	711,797.52	32° 35' 2.175 N 103° 46' 47.688 W
- actual wellpath rises by 185.26ft at 12074.00ft MD (2014.74 TVD, 380.78 N,-432.97 E)									
- Bint									

Design Parameters:					
Measured Depth	Vertical Depth	Horizontal Separation		Remarks	
(ft)	(ft)	North-South (ft)	East-West (ft)		
7,979.00	7,977.13	-19.08	46.70	First MWD Survey	
12,030.00	11,970.74	380.89	-433.08	Last MWD Survey	
12,074.00	12,014.74	380.78	-432.97	Proj. to Bit	

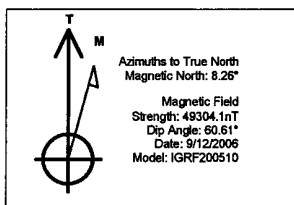
Checked By: _____ Approved By: _____ Date: _____



Project: Lea County (NAD 83)
 Site: New Sheriff #10 Fed 1
 Well: New Sheriff #10 Fed 1
 Wellbore: S-Well #1
 Plan: Plan #2 (New Sheriff #10 Fed 1/S-Well #1)

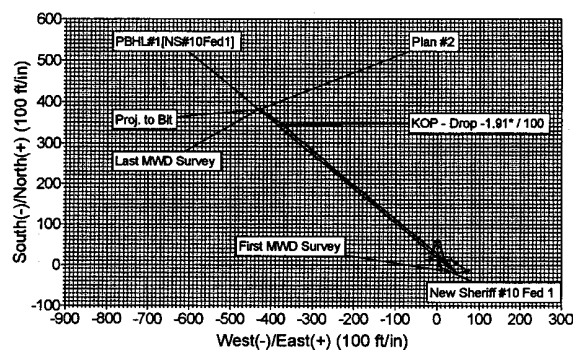


SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	7923.00	1.01	259.16	7921.13	-18.95	47.67	0.00	0.00	-48.26	
2	8042.00	1.90	303.20	8040.10	-18.07	44.99	1.15	74.91	-45.67	
3	8600.00	11.00	310.10	8593.99	21.37	-3.57	1.63	8.32	16.84	
4	11233.00	11.00	310.10	11178.61	344.98	-387.87	0.00	0.00	519.09	
5	11807.91	0.00	0.00	11750.00	380.42	-429.95	1.91	180.00	574.09	
6	14057.91	0.00	0.00	14000.00	380.42	-429.95	0.00	0.00	574.09	



PROJECT DETAILS: Lea County (NAD 83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level

ANNOTATIONS		
TVD	MD	Annotation
8040.10	8042.00	Last MWD Survey - Build 1.63° / 100
8593.99	8600.00	EOB - Hold 11.0° Inc. :: 310.10 Azi.
11178.61	11233.00	KOP - Drop -1.91° / 100
11750.00	11807.91	EOD - Hold 0.0° Inc. :: 0.0° Azi.



Plan: Plan #2 (New Sheriff #10 Fed 1/S-Well #1)
 Created By: L.D. Burton Date: 10/09/2006