

Results of Directional Survey

API number:	30-025-40300		
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO
		Property:	EAST LUSK 15 FEDERAL COM # 1H

surface	ULSTR:	P	15	T 19S	R 32E
				660 FSL	380 FEL

BH Loc	ULSTR:	M	15	T 19S	R 32E
13863	MD	9490.2	TVD	615 FSL	4951 FEL
					329 FWL

Top Perf/OH	ULSTR:	P	15	T 19S	R 32E
9502	MD	9469.1	TVD	556 FSL	625 FEL

Bot Perf/OH	ULSTR:	N	15	T 19S	R 32E
11600	MD	9548.9	TVD	589 FSL	2690 FEL
					2590 FWL

	MD	N/S	E/W	VD
	9486	-104.30	-233.40	9457.8
TOP PERFS/OH	9502	-104.40	-244.80	9469.05
	9518	-104.50	-256.20	9480.30
	11576	-71.10	-2286.00	9549.60
BOT PERFS/OH	11600	-70.95	-2309.96	9548.88
	11639	-70.70	-2348.90	9547.70

NEXT TO LAST	13804	-46.10	-4511.70	9491.80
LAST READING	13863	-45.10	-4570.70	9490.20
TD	13863	-45.10	-4570.70	9490.20

Surface Location	660 FS	380 FE
Projected BHL	615 FS	4951 FE
Location of		
Top Perfs/OH	556 FS	625 FE
Bottom Perfs/OH	589 FS	2690 FE

SUMMARY of Subsurface Locations

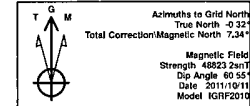
Surface Location	P-15-19S-32E	660 FS	380 FE	Vert. Depth
Top Perfs/OH	P-15-19S-32E	556 FS	625 FE	9469.05
Bottom Perfs/OH	N-15-19S-32E	589 FS	2690 FE	9548.88
Projected TD	M-15-19S-32E	615 FS	4951 FE	9490.20

FEB 23 2012



Company: Cimarex Energy Co. (Midland)
 Project: Lea County (NAD 83)
 Site: Sec 15-T19S-R32E
 Well: East Lusk 15 Fed #1Y
 Wellbore: Wellbore #1
 Design: Design #3
 Lat: 32° 39' 17.814 N
 Long: 103° 44' 48.051 W
 GL: 3618.0
 KB: WELL @ 3651.0ustf (Original Well Elev)

GREAT WHITE
 DIRECTIONAL SERVICES™
 an Archer company



REFERENCE INFORMATION	
Co-ordinate (N/E) Reference	Well East Lusk 15 Fed #1Y, Grid North
Vertical (TVD) Reference	WELL @ 3651.0ustf (Original Well Elev)
Section (VS) Reference	Slot - (6 ON, 0.06)
Measured Depth Reference	WELL @ 3651.0ustf (Original Well Elev)
Calculation Method	Minimum Curvature

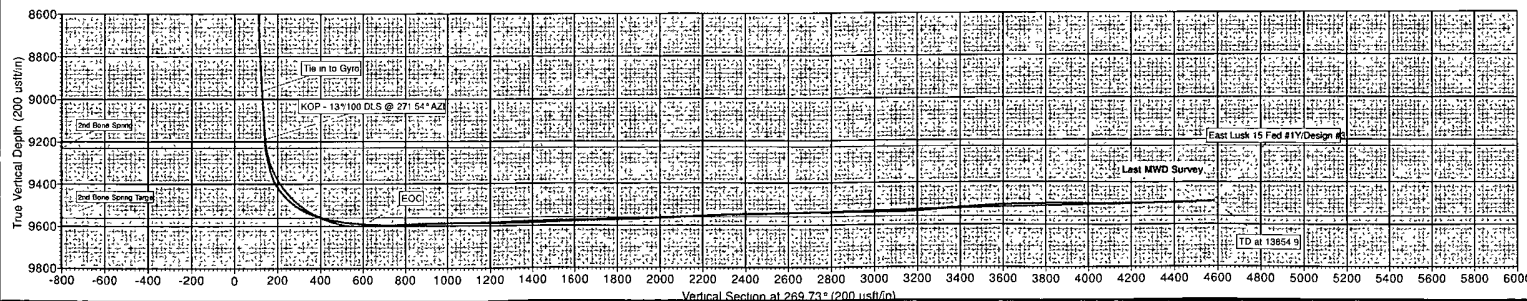
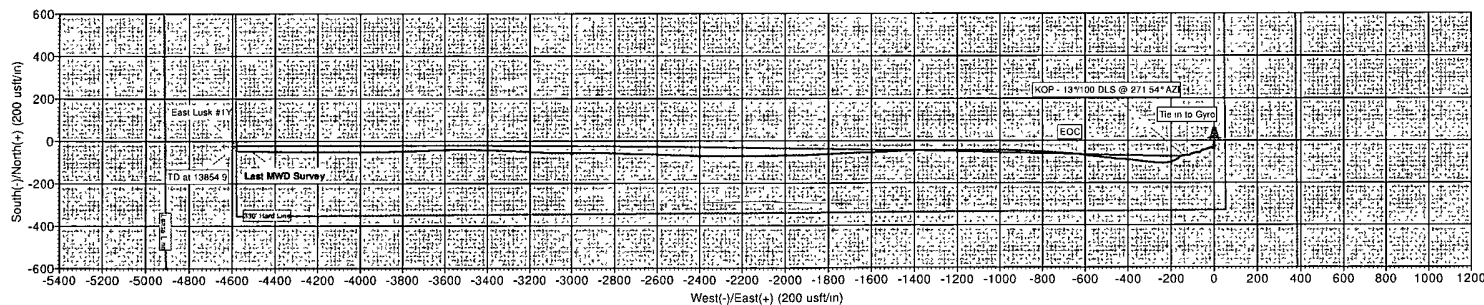
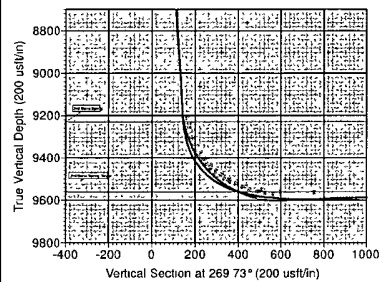
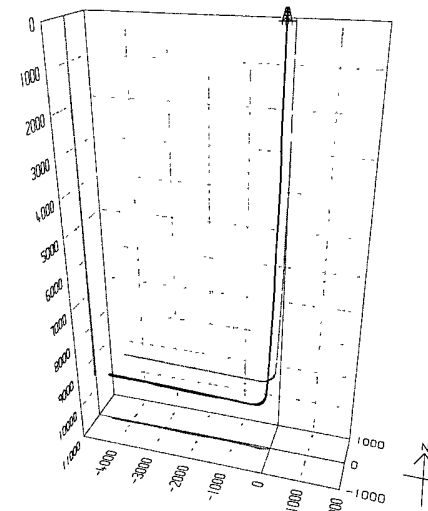
WELL DETAILS East Lusk 15 Fed #1Y						
		Ground Level		3618.0		
+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	602499.90	721889.50	32° 39' 17.814 N	103° 44' 48.051 W	

WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	+N-S	+E-W	Latitude	Longitude	Shape Point
East Lusk #1Y	9450.0	-21.6	-4579.7	32° 39' 17.847 N	103° 45' 41.620 W	

SECTION DETAILS											
MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect		Annotation	
8966.2	3.82	261.06	8963.1	-70.3	-127.4	0.00	0.00	127.7		Tie In To Gyro	
9181.9	3.82	261.06	9180.3	-72.7	-142.2	0.00	0.00	142.6		KOP - 13°10'00 DLS @ 271.54° AZ	
9687.5	91.58	271.54	9680.0	-65.7	-594.2	13.00	10.48	594.5		EOC	
13854.9	91.58	269.73	9490.0	-21.6	-4579.7	0.05	-90.02	4579.8		TD at 13854.9	

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

SITE DETAILS Sec 15-T19S-R32E	
Site Centre Latitude	32° 39' 17.815 N
Longitude	103° 44' 47.464 W
Positional Uncertainty	0.0
Convergence	0.32
Local North Grid	



RECEIVED

FEB 06 2012

HOBBS OGD

SUR: P-15-19S-32e, 660/S & 380/E
 BHL: M-15-19S-32e, 615/S & 4951/E
 API # 30-025-40300

Cimarex Energy Co. (Midland)

Lea County (NAD 83)

Sec 15-T19S-R32E

East Lusk 15 Fed #1Y

Wellbore #1

Survey: Survey #1

Standard Survey Report

16 November, 2011

Great White Directional Services

Survey Report

Company:	Cimarex Energy Co. (Midland)	Local Co-ordinate Reference:	Well East Lusk 15 Fed #1Y
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3651.0usft (Original Well Elev)
Site:	Sec 15-T19S-R32E	MD Reference:	WELL @ 3651.0usft (Original Well Elev)
Well:	East Lusk 15 Fed #1Y	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project: 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		Sec 15-T19S-R32E			
Site Position:		Northing:	602,500.30 usft	Latitude:	32° 39' 17.815 N
From:	Map	Easting:	721,939.70 usft	Longitude:	103° 44' 47.464 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.32 °

Well	East Lusk 15 Fed #1Y					
Well Position	+N/-S	0.0 usft	Northing:	602,499.90 usft	Latitude:	32° 39' 17.814 N
	+E/-W	0.0 usft	Easting:	721,889.50 usft	Longitude:	103° 44' 48.051 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,618.0 usft

Wellbore		Wellbore #1			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/11/11	7.66	60.55	48,823

Design		Wellbore #1			
Audit Notes:					
Version:		1.0		Phase: ACTUAL	
				Tie On Depth: 0.0	
Vertical Section:		Depth From (TVD)		+N/-S	
		(usft)		(usft)	
		0.0		0.0	
				+E/-W	
				(usft)	
				Direction	
				(°)	
				269.73	

Survey Program		Date	11/16/11		
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
126.7	8,966.2	Gyro (Wellbore #1)	MWD	MWD - Standard	
9,170.0	13,863.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey	Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
	Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
	(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
	8,966.2	3.82	261.06	8,963.1	-70.3	-127.4	127.7	0.00	0.00	0.00
Tie In To Gyro										
	9,170.0	2.70	292.60	9,166.6	-69.5	-138.5	138.9	1.02	-0.55	15.48
	9,202.0	4.00	275.70	9,198.6	-69.1	-140.3	140.7	5.06	4.06	-52.81
	9,233.0	7.60	266.70	9,229.4	-69.2	-143.5	143.8	11.94	11.61	-29.03
	9,265.0	10.60	251.70	9,261.0	-70.2	-148.4	148.7	11.88	9.38	-46.88
	9,297.0	13.80	239.80	9,292.3	-73.0	-154.5	154.8	12.67	10.00	-37.19
	9,329.0	17.70	229.30	9,323.1	-78.1	-161.5	161.8	15.05	12.19	-32.81
	9,361.0	22.30	233.80	9,353.1	-84.9	-170.0	170.4	15.15	14.38	14.06
	9,392.0	27.60	243.80	9,381.3	-91.6	-181.2	181.7	21.80	17.10	32.26

Great White Directional Services

Survey Report

Company:	Cimarex Energy Co. (Midland)	Local Co-ordinate Reference:	Well: East Lusk 15 Fed #1Y
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3651.0usft (Original Well Elev)
Site:	Sec.15-T19S-R32E	MD Reference:	WELL @ 3651.0usft (Original Well Elev)
Well:	East Lusk 15 Fed #1Y	North Reference:	Grd
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,423.0	32.70	252.40	9,408.1	-97.3	-195.7	196.1	21.52	16.45	27.74
9,455.0	37.80	259.10	9,434.2	-101.7	-213.6	214.1	19.98	15.94	20.94
9,486.0	42.80	266.10	9,457.8	-104.3	-233.4	233.9	21.74	16.13	22.58
9,518.0	47.90	272.40	9,480.3	-104.5	-256.2	256.7	21.20	15.94	19.69
9,549.0	53.20	273.20	9,500.0	-103.3	-280.1	280.6	17.21	17.10	2.58
9,581.0	59.60	277.60	9,517.7	-100.8	-306.6	307.0	23.04	20.00	13.75
9,612.0	64.40	278.00	9,532.3	-97.1	-333.7	334.1	15.53	15.48	1.29
9,644.0	68.70	276.50	9,545.0	-93.4	-362.8	363.2	14.11	13.44	-4.69
9,675.0	72.60	275.50	9,555.3	-90.3	-391.9	392.3	12.94	12.58	-3.23
9,707.0	75.90	275.00	9,564.0	-87.5	-422.5	423.0	10.42	10.31	-1.56
9,738.0	78.80	275.70	9,570.8	-84.7	-452.7	453.1	9.61	9.35	2.26
9,770.0	79.80	276.50	9,576.7	-81.3	-483.9	484.3	3.97	3.13	2.50
9,802.0	81.80	276.60	9,581.8	-77.7	-515.3	515.7	6.26	6.25	0.31
9,834.0	84.40	277.10	9,585.7	-73.9	-546.8	547.2	8.27	8.13	1.56
9,866.0	85.00	276.80	9,588.6	-70.1	-578.5	578.8	2.09	1.88	-0.94
9,897.0	86.80	276.20	9,590.8	-66.6	-609.2	609.5	6.12	5.81	-1.94
9,929.0	87.60	276.20	9,592.4	-63.1	-641.0	641.3	2.50	2.50	0.00
9,961.0	88.20	274.50	9,593.6	-60.1	-672.8	673.1	5.63	1.88	-5.31
9,993.0	89.70	273.90	9,594.2	-57.8	-704.7	705.0	5.05	4.69	-1.88
10,024.0	89.80	273.60	9,594.3	-55.8	-735.6	735.9	1.02	0.32	-0.97
10,056.0	91.80	273.80	9,593.8	-53.7	-767.6	767.8	6.28	6.25	0.63
10,119.0	92.50	273.10	9,591.5	-49.9	-830.4	830.6	1.57	1.11	-1.11
10,183.0	92.70	272.40	9,588.6	-46.9	-894.3	894.5	1.14	0.31	-1.09
10,246.0	91.60	271.40	9,586.2	-44.8	-957.2	957.4	2.36	-1.75	-1.59
10,309.0	90.50	270.80	9,585.1	-43.6	-1,020.2	1,020.4	1.99	-1.75	-0.95
10,372.0	89.90	270.50	9,584.8	-42.8	-1,083.2	1,083.4	1.06	-0.95	-0.48
10,434.0	89.80	270.10	9,585.0	-42.5	-1,145.2	1,145.4	0.67	-0.16	-0.65
10,498.0	90.00	269.80	9,585.1	-42.6	-1,209.2	1,209.4	0.56	0.31	-0.47
10,562.0	90.60	269.50	9,584.8	-43.0	-1,273.2	1,273.4	1.05	0.94	-0.47
10,625.0	90.50	268.80	9,584.2	-43.9	-1,336.2	1,336.3	1.12	-0.16	-1.11
10,688.0	90.90	268.60	9,583.4	-45.3	-1,399.1	1,399.3	0.71	0.63	-0.32
10,752.0	91.60	267.90	9,582.0	-47.3	-1,463.1	1,463.3	1.55	1.09	-1.09
10,815.0	92.30	267.60	9,579.9	-49.8	-1,526.0	1,526.2	1.21	1.11	-0.48
10,874.0	92.80	267.50	9,577.2	-52.3	-1,584.9	1,585.1	0.86	0.85	-0.17
10,942.0	92.10	267.60	9,574.3	-55.2	-1,652.8	1,653.0	1.04	-1.03	0.15
11,005.0	91.70	267.50	9,572.2	-57.9	-1,715.7	1,715.9	0.65	-0.63	-0.16
11,068.0	91.90	267.40	9,570.3	-60.7	-1,778.6	1,778.8	0.35	0.32	-0.16
11,131.0	92.60	267.40	9,567.8	-63.5	-1,841.5	1,841.7	1.11	1.11	0.00
11,194.0	91.60	267.90	9,565.5	-66.1	-1,904.4	1,904.7	1.77	-1.59	0.79
11,258.0	91.90	268.70	9,563.5	-68.0	-1,968.3	1,968.6	1.33	0.47	1.25
11,322.0	92.00	268.90	9,561.3	-69.3	-2,032.3	2,032.6	0.35	0.16	0.31
11,385.0	92.50	269.60	9,558.9	-70.2	-2,095.2	2,095.5	1.36	0.79	1.11
11,449.0	92.90	270.10	9,555.9	-70.3	-2,159.1	2,159.4	1.00	0.63	0.78

Great White Directional Services

Survey Report

Company:	Cimarex Energy Co. (Midland)	Local Co-ordinate Reference:	Well: East Lusk 15 Fed #1Y
Project:	Lea County (NAD:83)	TVD Reference:	WELL @ 3651.0usft (Original Well Elev)
Site:	Sec 15-T19S-R32E	MD Reference:	WELL @ 3651.0usft (Original Well Elev)
Well:	East Lusk 15 Fed #1Y	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User.Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,512.0	93.20	269.30	9,552.5	-70.7	-2,222.0	2,222.4	1.35	0.48	-1.27	
11,576.0	92.00	270.00	9,549.6	-71.1	-2,286.0	2,286.3	2.17	-1.88	1.09	
11,639.0	91.50	270.70	9,547.7	-70.7	-2,348.9	2,349.2	1.37	-0.79	1.11	
11,703.0	91.20	270.70	9,546.2	-69.9	-2,412.9	2,413.2	0.47	-0.47	0.00	
11,765.0	91.30	271.90	9,544.8	-68.5	-2,474.9	2,475.2	1.94	0.16	1.94	
11,829.0	90.80	272.00	9,543.6	-66.3	-2,538.8	2,539.1	0.80	-0.78	0.16	
11,892.0	90.70	271.90	9,542.8	-64.2	-2,601.8	2,602.1	0.22	-0.16	-0.16	
11,956.0	91.30	272.00	9,541.7	-62.0	-2,665.8	2,666.0	0.95	0.94	0.16	
12,018.0	91.60	272.20	9,540.1	-59.7	-2,727.7	2,727.9	0.58	0.48	0.32	
12,082.0	90.30	272.20	9,539.1	-57.3	-2,791.6	2,791.9	2.03	-2.03	0.00	
12,146.0	90.70	271.80	9,538.5	-55.0	-2,855.6	2,855.8	0.88	0.63	-0.63	
12,209.0	89.70	270.30	9,538.3	-53.9	-2,918.6	2,918.8	2.86	-1.59	-2.38	
12,272.0	89.80	268.40	9,538.6	-54.6	-2,981.6	2,981.8	3.02	0.16	-3.02	
12,335.0	89.90	270.70	9,538.7	-55.1	-3,044.6	3,044.8	3.65	0.16	3.65	
12,398.0	90.40	271.50	9,538.6	-53.9	-3,107.6	3,107.8	1.50	0.79	1.27	
12,461.0	94.20	272.50	9,536.0	-51.7	-3,170.4	3,170.7	6.24	6.03	1.59	
12,524.0	95.20	272.60	9,530.9	-48.9	-3,233.2	3,233.4	1.60	1.59	0.16	
12,587.0	95.50	272.30	9,525.0	-46.2	-3,295.8	3,296.0	0.67	0.48	-0.48	
12,650.0	93.90	272.70	9,519.8	-43.5	-3,358.6	3,358.7	2.62	-2.54	0.63	
12,714.0	93.20	271.90	9,515.9	-40.9	-3,422.4	3,422.5	1.66	-1.09	-1.25	
12,777.0	93.10	271.60	9,512.4	-39.0	-3,485.3	3,485.4	0.50	-0.16	-0.48	
12,839.0	93.40	268.40	9,508.9	-39.0	-3,547.2	3,547.3	5.18	0.48	-5.16	
12,902.0	92.00	267.90	9,505.9	-41.0	-3,610.1	3,610.2	2.36	-2.22	-0.79	
12,965.0	91.90	267.60	9,503.8	-43.5	-3,673.0	3,673.1	0.50	-0.16	-0.48	
13,028.0	92.30	268.20	9,501.5	-45.8	-3,735.9	3,736.1	1.14	0.63	0.95	
13,092.0	91.00	269.00	9,499.6	-47.4	-3,799.8	3,800.0	2.38	-2.03	1.25	
13,156.0	90.10	269.30	9,499.0	-48.3	-3,863.8	3,864.0	1.48	-1.41	0.47	
13,220.0	90.20	269.70	9,498.9	-48.9	-3,927.8	3,928.0	0.64	0.16	0.63	
13,283.0	90.30	269.70	9,498.6	-49.2	-3,990.8	3,991.0	0.16	0.16	0.00	
13,347.0	90.10	269.80	9,498.4	-49.5	-4,054.8	4,055.0	0.35	-0.31	0.16	
13,410.0	90.40	269.90	9,498.1	-49.6	-4,117.8	4,118.0	0.50	0.48	0.16	
13,473.0	90.20	270.30	9,497.8	-49.5	-4,180.8	4,181.0	0.71	-0.32	0.63	
13,537.0	90.30	270.40	9,497.5	-49.1	-4,244.8	4,245.0	0.22	0.16	0.16	
13,601.0	90.90	270.00	9,496.8	-48.9	-4,308.8	4,309.0	1.13	0.94	-0.63	
13,664.0	91.50	270.70	9,495.5	-48.5	-4,371.8	4,372.0	1.46	0.95	1.11	
13,728.0	91.50	271.00	9,493.8	-47.6	-4,435.8	4,435.9	0.47	0.00	0.47	
13,791.0	91.50	271.00	9,492.2	-46.5	-4,498.7	4,498.9	0.00	0.00	0.00	
13,804.0	91.60	271.10	9,491.8	-46.2	-4,511.7	4,511.9	1.09	0.77	0.77	
Last MWD Survey										
13,863.0	91.60	271.10	9,490.2	-45.1	-4,570.7	4,570.9	0.00	0.00	0.00	
Projection To Bit - East Lusk #1Y										

Great White Directional Services

Survey Report

Company:	Cimarex Energy Co. (Midland)	Local Co-ordinate Reference:	Well East Lusk 15 Fed #1Y
Project:	Lea County (NAD 83)	TVD Reference:	WELL @ 3651.0usft (Original Well Elev)
Site:	Sec 15-T19S-R32E	MD Reference:	WELL @ 3651.0usft (Original Well Elev)
Well:	East Lusk 15 Fed #1Y	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,966.2	8,963.1	-70.3	-127.4	Tie In To Gyro
13,804.0	9,491.8	-46.2	-4,511.7	Last MWD Survey
13,863.0	9,490.2	-45.1	-4,570.7	Projection To Bit

Checked By: _____ Approved By: _____ Date: _____

A Gyrodata Directional Survey

for

CIMAREX ENERGY

Lease: EAST LUSK 15 FED COM Well: #1Y, 4 INCH DRILLPIPE
Location: KEY DRILLING RIG #10, LEA COUNTY, NEW MEXICO

HOBS OCD
FEB 06 2012
RECEIVED

Job Number: MD1011GDM449

Run Date: 26 Oct 2011

Surveyor: Michael Robles

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Well Plan/Plot

Survey Latitude: 32.654947 deg. N Longitude: 103.746681 deg. W

Azimuth Correction:
Gyro: -0.52000 deg to Grid North

Depth Reference: Rotary Table

Rotary Table Elevation: 18'00"

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

SUR: P-15-19s-32e, 660/S & 380/E
BHL: M-15-19s-32e, 615/S & 4951/E
API # 30-025-40300

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: EAST LUSK 15 FED COM Well: #1Y, 4 INCH DRILLPIPE

Location: KEY DRILLING RIG #10, LEA COUNTY, NEW MEXICO

Job Number: MD1011GDM449

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet
0.00	0.00	0.00	N 0 0 E	0.00	0.00	0.0	0.0	0.00 N 0.00 E
0 - 8966 FT RATE GYROSCOPIC MULTISHOT SURVEY TO RUN INSIDE 4 INCH DRILLPIPE.								
ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO KEY DRILLING RIG #10 WITH AN R.K.B. HEIGHT OF 18 FEET.								
63.40	0.17	253.59	S 73 35 W	0.27	63.40	0.1	253.6	0.03 S 0.09 W
126.70	0.38	227.31	S 47 19 W	0.38	126.70	0.4	239.7	0.20 S 0.33 W
190.10	0.40	222.02	S 42 1 W	0.06	190.10	0.8	231.7	0.50 S 0.64 W
253.50	0.52	195.39	S 15 23 W	0.38	253.50	1.3	222.4	0.94 S 0.86 W
316.90	0.61	188.23	S 8 14 W	0.18	316.89	1.8	212.4	1.56 S 0.99 W
380.20	0.69	185.61	S 5 37 W	0.13	380.19	2.5	205.3	2.27 S 1.07 W
443.60	0.74	185.55	S 5 33 W	0.08	443.58	3.3	200.6	3.06 S 1.15 W
507.00	0.73	186.06	S 6 4 W	0.02	506.98	4.1	197.7	3.86 S 1.23 W
570.30	0.72	183.81	S 3 49 W	0.05	570.27	4.8	195.6	4.66 S 1.30 W
633.70	0.72	180.15	S 0 9 W	0.07	633.67	5.6	193.7	5.46 S 1.33 W
697.10	0.72	183.14	S 3 8 W	0.06	697.06	6.4	192.2	6.25 S 1.35 W
760.40	0.74	182.91	S 2 55 W	0.03	760.36	7.2	191.2	7.06 S 1.39 W
823.80	0.76	187.51	S 7 31 W	0.10	823.75	8.0	190.6	7.89 S 1.47 W
887.20	0.77	203.11	S 23 7 W	0.33	887.15	8.9	191.0	8.69 S 1.69 W
950.50	0.85	207.91	S 27 55 W	0.17	950.44	9.7	192.3	9.50 S 2.08 W
1013.90	0.95	209.92	S 29 55 W	0.17	1013.83	10.7	193.9	10.37 S 2.56 W
1077.30	0.99	208.71	S 28 43 W	0.07	1077.22	11.7	195.3	11.31 S 3.09 W
1140.70	0.90	207.56	S 27 34 W	0.15	1140.62	12.7	196.3	12.23 S 3.58 W
1204.00	0.83	203.54	S 23 32 W	0.15	1203.91	13.7	197.0	13.09 S 3.99 W

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: EAST LUSK 15 FED COM Well: #1Y, 4 INCH DRILLPIPE

Location: KEY DRILLING RIG #10, LEA COUNTY, NEW MEXICO

Job Number: MD1011GDM449

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet
1267.40	0.85	199.12	S 19 7 W	0.11	1267.30	14.6	197.2	13.96 S 4.33 W
1330.80	0.98	195.50	S 15 30 W	0.22	1330.69	15.6	197.2	14.92 S 4.63 W
1394.10	1.18	189.67	S 9 40 W	0.36	1393.98	16.8	196.9	16.09 S 4.88 W
1457.50	1.42	187.87	S 7 52 W	0.38	1457.37	18.2	196.2	17.51 S 5.10 W
1520.90	1.68	185.78	S 5 47 W	0.42	1520.74	19.9	195.4	19.21 S 5.30 W
1584.30	1.99	185.09	S 5 5 W	0.49	1584.11	21.9	194.5	21.23 S 5.49 W
1647.60	2.25	183.88	S 3 53 W	0.42	1647.37	24.2	193.5	23.57 S 5.67 W
1711.00	2.31	184.15	S 4 9 W	0.10	1710.72	26.7	192.6	26.08 S 5.85 W
1774.40	2.30	183.65	S 3 39 W	0.04	1774.06	29.3	191.9	28.63 S 6.02 W
1837.70	1.95	183.87	S 3 52 W	0.55	1837.32	31.6	191.3	30.97 S 6.18 W
1901.10	1.82	184.02	S 4 1 W	0.21	1900.69	33.6	190.8	33.05 S 6.32 W
1964.50	1.73	187.76	S 7 46 W	0.23	1964.06	35.6	190.6	35.00 S 6.52 W
2027.80	1.56	191.32	S 11 19 W	0.31	2027.33	37.4	190.5	36.79 S 6.82 W
2091.20	0.83	206.01	S 26 1 W	1.24	2090.72	38.7	190.7	38.05 S 7.19 W
2154.60	0.37	242.18	S 62 11 W	0.91	2154.11	39.3	191.1	38.56 S 7.57 W
2217.90	0.24	334.51	N 25 29 W	0.71	2217.41	39.3	191.5	38.54 S 7.81 W
2281.30	0.44	358.74	N 1 16 W	0.38	2280.81	39.0	191.7	38.17 S 7.87 W
2344.70	0.97	25.10	N 25 6 E	0.96	2344.21	38.2	191.5	37.44 S 7.65 W
2408.10	1.36	27.46	N 27 28 E	0.62	2407.59	37.0	191.0	36.29 S 7.08 W
2471.40	1.83	31.56	N 31 34 E	0.76	2470.87	35.3	190.1	34.76 S 6.20 W
2534.80	2.11	31.77	N 31 46 E	0.44	2534.23	33.3	188.7	32.91 S 5.06 W

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: EAST LUSK 15 FED COM Well: #1Y, 4 INCH DRILLPIPE

Location: KEY DRILLING RIG #10, LEA COUNTY, NEW MEXICO

Job Number: MD1011GDM449

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
2598.20	2.11	34.86	N 34 52 E	0.18	2597.59	31.2 187.0	30.96 S 3.77 W
2661.50	2.19	35.77	N 35 46 E	0.14	2660.84	29.1 184.7	29.02 S 2.40 W
2724.90	2.07	39.45	N 39 27 E	0.29	2724.20	27.2 182.0	27.15 S 0.97 W
2788.30	1.44	50.52	N 50 31 E	1.12	2787.57	25.8 179.2	25.76 S 0.38 E
2851.70	1.04	62.06	N 62 4 E	0.74	2850.95	25.0 176.6	24.99 S 1.50 E
2915.00	0.89	63.30	N 63 18 E	0.24	2914.25	24.6 174.3	24.50 S 2.45 E
2978.40	0.74	66.35	N 66 21 E	0.25	2977.64	24.3 172.3	24.11 S 3.26 E
3041.80	0.53	75.46	N 75 28 E	0.37	3041.04	24.2 170.7	23.87 S 3.92 E
3105.10	0.42	87.47	N 87 28 E	0.23	3104.33	24.2 169.4	23.79 S 4.44 E
3168.50	0.39	104.90	S 75 6 E	0.20	3167.73	24.3 168.4	23.83 S 4.88 E
3231.90	0.35	134.04	S 45 58 E	0.30	3231.13	24.6 167.7	24.02 S 5.22 E
3295.20	0.41	145.42	S 34 35 E	0.15	3294.43	25.0 167.3	24.35 S 5.49 E
3358.60	0.37	154.79	S 25 13 E	0.12	3357.83	25.4 167.0	24.72 S 5.71 E
3422.00	0.37	206.46	S 26 28 W	0.51	3421.23	25.7 167.2	25.09 S 5.70 E
3485.30	1.04	227.41	S 47 25 W	1.12	3484.52	26.2 168.6	25.66 S 5.19 E
3548.70	1.33	227.77	S 47 46 W	0.46	3547.91	26.9 171.0	26.54 S 4.22 E
3612.10	1.21	234.54	S 54 32 W	0.30	3611.29	27.6 173.5	27.42 S 3.13 E
3675.50	1.19	238.67	S 58 40 W	0.14	3674.68	28.2 175.9	28.15 S 2.02 E
3738.80	0.96	245.86	S 65 52 W	0.42	3737.97	28.7 178.0	28.71 S 0.98 E
3802.20	1.04	246.91	S 66 55 W	0.13	3801.36	29.2 180.1	29.16 S 0.04 W
3865.60	1.21	252.83	S 72 50 W	0.32	3864.75	29.6 182.3	29.58 S 1.20 W
3928.90	1.33	258.76	S 78 46 W	0.28	3928.03	30.0 184.9	29.92 S 2.56 W

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: EAST LUSK 15 FED COM Well: #1Y, 4 INCH DRILLPIPE

Location: KEY DRILLING RIG #10, LEA COUNTY, NEW MEXICO

Job Number: MD1011GDM449

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
3992.30	1.43	259.84	S 79 50 W	0.16	3991.41	30.5 187.7	30.20 S 4.06 W
4055.70	1.22	258.72	S 78 43 W	0.33	4054.79	31.0 190.2	30.47 S 5.50 W
4119.10	1.25	258.20	S 78 12 W	0.05	4118.18	31.5 192.5	30.75 S 6.84 W
4182.40	1.19	261.37	S 81 22 W	0.14	4181.47	32.0 194.8	30.99 S 8.17 W
4245.80	1.15	264.02	S 84 1 W	0.11	4244.85	32.6 196.9	31.15 S 9.45 W
4309.20	1.21	266.76	S 86 46 W	0.13	4308.24	33.1 199.0	31.26 S 10.75 W
4372.50	1.47	261.17	S 81 10 W	0.46	4371.52	33.7 201.3	31.42 S 12.22 W
4435.90	2.15	249.42	S 69 25 W	1.22	4434.89	35.0 203.9	31.96 S 14.14 W
4499.30	2.38	245.27	S 65 16 W	0.45	4498.24	36.8 206.5	32.93 S 16.45 W
4562.60	2.17	243.43	S 63 26 W	0.35	4561.49	38.8 208.8	34.02 S 18.71 W
4626.00	1.95	248.02	S 68 1 W	0.43	4624.85	40.7 210.7	34.96 S 20.79 W
4689.40	1.91	251.74	S 71 44 W	0.21	4688.21	42.3 212.6	35.69 S 22.79 W
4752.80	1.80	254.87	S 74 52 W	0.24	4751.58	43.9 214.3	36.28 S 24.76 W
4816.10	1.76	256.69	S 76 41 W	0.11	4814.85	45.4 215.9	36.77 S 26.66 W
4879.50	1.56	255.80	S 75 48 W	0.32	4878.22	46.8 217.4	37.20 S 28.45 W
4942.90	1.49	256.09	S 76 5 W	0.11	4941.60	48.2 218.7	37.61 S 30.08 W
5006.20	1.27	252.86	S 72 52 W	0.37	5004.88	49.4 219.7	38.02 S 31.55 W
5069.60	1.06	249.45	S 69 27 W	0.35	5068.27	50.5 220.5	38.43 S 32.77 W
5133.00	0.99	250.85	S 70 51 W	0.12	5131.66	51.5 221.1	38.82 S 33.84 W
5196.30	0.85	253.42	S 73 25 W	0.23	5194.95	52.4 221.7	39.13 S 34.81 W
5259.70	0.72	252.36	S 72 22 W	0.21	5258.34	53.1 222.1	39.38 S 35.64 W
5323.10	0.76	250.62	S 70 37 W	0.07	5321.74	53.8 222.6	39.64 S 36.41 W

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: EAST LUSK 15 FED COM Well: #1Y, 4 INCH DRILLPIPE

Location: KEY DRILLING RIG #10, LEA COUNTY, NEW MEXICO

Job Number: MD1011GDM449

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	AZIMUTH deg.	HORIZONTAL COORDINATES feet
5386.40	0.78	249.13	S 69 8 W	0.04	5385.03	54.6	223.0	39.94 S 37.21 W
5449.80	0.62	242.03	S 62 2 W	0.29	5448.43	55.3	223.3	40.25 S 37.92 W
5513.20	0.60	237.21	S 57 13 W	0.09	5511.83	55.9	223.5	40.59 S 38.50 W
5576.60	0.74	229.38	S 49 23 W	0.26	5575.22	56.7	223.6	41.04 S 39.09 W
5639.90	0.79	225.10	S 45 6 W	0.12	5638.52	57.5	223.7	41.61 S 39.71 W
5703.30	0.58	222.80	S 42 48 W	0.33	5701.91	58.3	223.7	42.16 S 40.24 W
5766.70	0.21	204.84	S 24 50 W	0.61	5765.31	58.7	223.6	42.50 S 40.50 W
5830.00	0.11	192.22	S 12 13 W	0.17	5828.61	58.9	223.6	42.66 S 40.56 W
5893.40	0.03	168.95	S 11 3 E	0.13	5892.01	58.9	223.5	42.74 S 40.57 W
5956.80	0.09	351.20	N 8 48 W	0.19	5955.41	58.9	223.5	42.70 S 40.58 W
6020.10	0.19	336.85	N 23 9 W	0.17	6018.71	58.8	223.7	42.56 S 40.63 W
6083.50	0.29	293.24	N 66 46 W	0.32	6082.11	58.9	223.9	42.40 S 40.82 W
6146.90	0.61	267.05	S 87 3 W	0.59	6145.51	59.2	224.3	42.35 S 41.30 W
6210.30	0.87	265.33	S 85 20 W	0.41	6208.90	59.8	224.8	42.41 S 42.12 W
6273.70	1.03	258.73	S 78 44 W	0.31	6272.29	60.6	225.4	42.56 S 43.16 W
6337.00	1.24	255.14	S 75 8 W	0.35	6335.58	61.7	226.0	42.85 S 44.38 W
6400.40	1.52	256.80	S 76 48 W	0.45	6398.96	63.0	226.7	43.22 S 45.86 W
6463.70	1.80	258.44	S 78 26 W	0.45	6462.23	64.6	227.5	43.61 S 47.65 W
6527.10	2.00	258.12	S 78 7 W	0.32	6525.60	66.4	228.5	44.03 S 49.71 W
6590.50	1.86	252.42	S 72 25 W	0.37	6588.96	68.3	229.3	44.57 S 51.77 W
6653.90	1.86	246.70	S 66 42 W	0.29	6652.33	70.2	229.9	45.29 S 53.70 W

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: EAST LUSK 15 FED COM Well: #1Y, 4 INCH DRILLPIPE

Location: KEY DRILLING RIG #10, LEA COUNTY, NEW MEXICO

Job Number: MD1011GDM449

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
6717.20	1.79	245.62	S 65 37 W	0.12	6715.60	72.2 230.3	46.10 S 55.54 W
6780.60	1.68	242.28	S 62 17 W	0.24	6778.97	74.0 230.7	46.95 S 57.27 W
6844.00	1.67	233.38	S 53 23 W	0.41	6842.34	75.9 230.8	47.93 S 58.83 W
6907.30	1.87	236.38	S 56 23 W	0.35	6905.61	77.8 230.9	49.05 S 60.43 W
6970.70	1.91	235.62	S 55 37 W	0.07	6968.98	79.9 231.1	50.22 S 62.16 W
7034.10	1.90	229.64	S 49 38 W	0.31	7032.34	82.0 231.1	51.50 S 63.84 W
7097.40	1.64	227.93	S 47 56 W	0.42	7095.61	84.0 231.1	52.78 S 65.31 W
7160.80	1.55	230.38	S 50 23 W	0.18	7158.99	85.7 231.0	53.94 S 66.64 W
7224.20	1.46	236.29	S 56 17 W	0.28	7222.37	87.4 231.1	54.93 S 67.97 W
7287.60	1.52	254.03	S 74 2 W	0.73	7285.74	89.0 231.3	55.61 S 69.45 W
7350.90	1.51	263.51	S 83 31 W	0.40	7349.02	90.5 231.8	55.94 S 71.09 W
7414.30	1.43	269.16	S 89 10 W	0.26	7412.40	91.8 232.4	56.04 S 72.71 W
7477.70	1.55	270.80	N 89 12 W	0.20	7475.78	93.1 233.0	56.04 S 74.36 W
7541.00	1.73	267.76	S 87 46 W	0.32	7539.05	94.6 233.6	56.07 S 76.17 W
7604.40	1.44	274.56	N 85 26 W	0.54	7602.43	96.0 234.3	56.04 S 77.92 W
7667.80	1.45	270.67	N 89 20 W	0.16	7665.81	97.2 234.9	55.97 S 79.52 W
7731.10	1.69	264.67	S 84 40 W	0.46	7729.09	98.7 235.4	56.05 S 81.25 W
7794.50	1.92	262.22	S 82 13 W	0.38	7792.45	100.5 235.9	56.28 S 83.23 W
7857.90	2.18	260.58	S 80 35 W	0.42	7855.81	102.5 236.5	56.62 S 85.47 W
7921.30	2.30	259.43	S 79 26 W	0.20	7919.17	104.8 237.0	57.05 S 87.91 W
7984.60	1.62	259.15	S 79 9 W	1.07	7982.43	106.8 237.5	57.45 S 90.04 W
8048.00	1.84	255.34	S 75 20 W	0.39	8045.80	108.6 237.8	57.88 S 91.90 W

A Gyrodata Directional Survey

CIMAREX ENERGY

Lease: EAST LUSK 15 FED COM Well: #1Y, 4 INCH DRILLPIPE

Location: KEY DRILLING RIG #10, LEA COUNTY, NEW MEXICO

Job Number: MD1011GDM449

MEASURED DEPTH feet	I N C L deg.	AZIMUTH deg.	BORE HOLE BEARING deg. min.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
8111.40	2.04	255.22	S 75 13 W	0.32	8109.16	110.7 238.1	58.42 S 93.98 W
8174.70	2.22	254.79	S 74 47 W	0.29	8172.42	112.9 238.5	59.03 S 96.25 W
8238.10	2.38	254.38	S 74 23 W	0.25	8235.77	115.4 238.8	59.71 S 98.71 W
8301.50	2.21	258.06	S 78 4 W	0.35	8299.12	117.8 239.2	60.32 S 101.17 W
8364.80	1.87	256.15	S 76 9 W	0.55	8362.38	119.9 239.5	60.82 S 103.37 W
8428.20	1.90	242.94	S 62 56 W	0.69	8425.74	122.0 239.7	61.54 S 105.31 W
8491.60	2.26	232.42	S 52 25 W	0.83	8489.10	124.3 239.7	62.78 S 107.23 W
8555.00	1.79	227.89	S 47 53 W	0.78	8552.46	126.5 239.5	64.21 S 108.96 W
8618.30	1.72	227.63	S 47 38 W	0.11	8615.73	128.4 239.3	65.51 S 110.39 W
8681.70	1.95	234.98	S 54 59 W	0.52	8679.10	130.4 239.2	66.77 S 111.98 W
8745.10	2.66	250.12	S 70 7 W	1.47	8742.45	132.9 239.3	67.89 S 114.25 W
8808.40	3.47	259.56	S 79 34 W	1.50	8805.66	136.1 239.7	68.74 S 117.51 W
8871.80	3.64	260.52	S 80 31 W	0.28	8868.94	139.8 240.2	69.42 S 121.38 W
8935.20	3.70	261.42	S 81 25 W	0.13	8932.21	143.6 240.8	70.05 S 125.39 W
8966.20	3.82	261.06	S 81 4 W	0.39	8963.14	145.5 241.1	70.36 S 127.40 W

Final Station Closure: Distance: 145.54 ft Az: 241.09 deg.