

Results of Directional Survey

API number:	30-025-40255		
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO
		Property:	SOUTHEAST LUSK 33 FEDERAL # 2H

surface	ULSTR:	A	33	T 19S	R 32E
				530 FNL	737 FEL

BH Loc	ULSTR:	P	33	T 19S	R 32E
13679	MD	9454.2	TVD	351 FSL	609 FEL
				4929 FNL	

Top Perf/OH	ULSTR:	A	33	T 19S	R 32E
9450	MD	9324.8	TVD	720 FNL	749 FEL

Bot Perf/OH	ULSTR:	P	33	T 19S	R 32E
13653	MD	9454.7	TVD	377 FSL	610 FEL
				4903 FNL	

	MD	N/S	E/W	VD
	9438	-179.71	-12.50	9319.28
TOP PERFS/OH	9450	-190.36	-11.82	9324.77
	9470	-208.12	-10.68	9333.91
	13634	-4353.56	126.12	9455.12
BOT PERFS/OH	13653	-4372.53	127.05	9454.72
	13679	-4398.50	128.32	9454.18

NEXT TO LAST	13634	-4353.56	126.12	9455.12
LAST READING	13679	-4398.50	128.32	9454.18
TD	13679	-4398.50	128.32	9454.18

Surface Location	530	FN	737	FE
Projected BHL	4929	FN	609	FE
Location of				
Top Perfs/OH	720	FN	749	FE
Bottom Perfs/OH	4903	FN	610	FE

SUMMARY of Subsurface Locations

Surface Location	A-33-19S-32E	530	FN	737	FE	Vert. Depth
Top Perfs/OH	A-33-19S-32E	720	FN	749	FE	9324.77
Bottom Perfs/OH	P-33-19S-32E	4903	FN	610	FE	9454.72
Projected TD	P-33-19S-32E	4929	FN	609	FE	9454.18

APR 10 2012



A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

February 7, 2012

HOBBS OCD

APR 05 2012

RECEIVED

Cimarex Energy Company
600 N. Marienfeld St., Ste. 600
Midland, TX 79701

Attn: Carolyn Larson

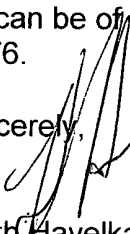
SUR: A-33-19s-32e, 530/N & 737/E
BHL: P-33-19s-32e, 4929/N & 609/E
API # 30-025-40255

Re: **SE Lusk Fed Com 33 2H**

Please find enclosed a copy of the survey from 0' to 8,869.90' ran on the above referenced well.

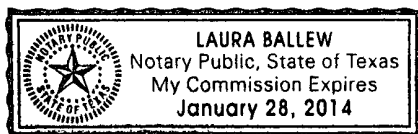
If I can be of any further service, please do not hesitate to call me at 800-606-4976.

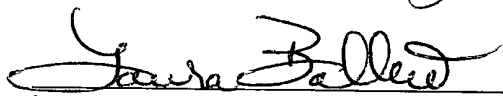
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 10th day of February
A.D., 2012, by Keith Havelka.




Laura Balley
Notary Public, State of Texas





Company: Cimarex Energy
Lease/Well: SE Lusk Fed Com 33/2H

Location: S33 T19S R32E

Rig Name: Key 881

State/County: New Mexico/Lea

Latitude: 32.62

GRID North is 0.31 Degrees East of True North

VS-Azi: 0.00 Degrees



HOBBS OCD
APR 05 2012
RECEIVED

RKB : 20 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: selusk2-01_int.ut

Minimum Curvature Method

Report Date/Time: 2/7/2012 / 12:58

Vaughn Energy Services

Fort Worth, Texas

817-741-3610

Surveyor: Ray Seago

SE Lusk Fed Com 33 2H / API 30-025-40255

SUR: A-33-19s-32e, 530/N & 737/E

BHL: P-33-19s-32e, 4929/N & 609/E

API # 30-025-40255

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
39.54	0.40	248.78	39.54	-0.05	-0.13	-0.05	0.14	248.78	1.02
102.84	0.29	233.79	102.84	-0.22	-0.47	-0.22	0.52	244.25	0.23
102.84	0.29	233.79	102.84	-0.22	-0.47	-0.22	0.52	244.25	****
166.14	0.35	257.16	166.14	-0.36	-0.78	-0.36	0.86	245.21	0.23
229.44	0.35	246.51	229.44	-0.48	-1.15	-0.48	1.24	247.25	0.10
229.44	0.35	246.51	229.44	-0.48	-1.15	-0.48	1.24	247.25	****
292.74	0.36	286.41	292.74	-0.50	-1.51	-0.50	1.59	251.64	0.38
356.04	0.37	254.84	356.03	-0.50	-1.90	-0.50	1.97	255.26	0.32
356.04	0.37	254.84	356.03	-0.50	-1.90	-0.50	1.97	255.26	****
419.34	0.38	275.11	419.33	-0.54	-2.31	-0.54	2.37	256.96	0.21
482.64	0.43	256.82	482.63	-0.57	-2.75	-0.57	2.81	258.30	0.21
482.64	0.43	256.82	482.63	-0.57	-2.75	-0.57	2.81	258.30	****
545.94	0.44	247.13	545.93	-0.72	-3.21	-0.72	3.29	257.36	0.12
609.24	0.45	240.98	609.23	-0.93	-3.65	-0.93	3.77	255.64	0.08
609.24	0.45	240.98	609.23	-0.93	-3.65	-0.93	3.77	255.64	****
672.54	0.42	292.28	672.53	-0.97	-4.08	-0.97	4.19	256.67	0.59
735.84	0.27	315.30	735.82	-0.77	-4.40	-0.77	4.46	260.01	0.32
735.84	0.27	315.30	735.82	-0.77	-4.40	-0.77	4.46	260.01	****

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
799.14	0.42	330.89	799.12	-0.47	-4.61	-0.47	4.64	264.22	0.28
862.44	0.35	259.42	862.42	-0.30	-4.92	-0.30	4.93	266.52	0.72
862.44	0.35	259.42	862.42	-0.30	-4.92	-0.30	4.93	266.52	****
925.74	0.45	241.87	925.72	-0.45	-5.33	-0.45	5.35	265.15	0.25
989.04	0.25	95.85	989.02	-0.58	-5.41	-0.58	5.44	263.84	1.06
989.04	0.25	95.85	989.02	-0.58	-5.41	-0.58	5.44	263.84	****
1052.34	0.60	65.62	1052.32	-0.46	-4.97	-0.46	4.99	264.69	0.63
1115.64	0.67	64.25	1115.61	-0.17	-4.34	-0.17	4.34	267.81	0.11
1115.64	0.67	64.25	1115.61	-0.17	-4.34	-0.17	4.34	267.81	****
1178.94	0.62	54.98	1178.91	0.19	-3.73	0.19	3.73	272.94	0.18
1242.24	0.58	45.71	1242.21	0.61	-3.22	0.61	3.27	280.78	0.17
1305.54	0.48	25.63	1305.50	1.07	-2.87	1.07	3.07	290.47	0.33
1368.84	0.37	5.54	1368.80	1.51	-2.74	1.51	3.13	298.92	0.28
1432.14	0.27	123.91	1432.10	1.63	-2.59	1.63	3.07	302.20	0.88
1495.44	0.17	242.28	1495.40	1.51	-2.55	1.51	2.97	300.51	0.61
1558.74	0.19	240.14	1558.70	1.41	-2.73	1.41	3.07	297.25	0.03
1622.04	0.21	238.01	1622.00	1.29	-2.92	1.29	3.20	293.83	0.03
1685.34	0.15	263.05	1685.30	1.22	-3.11	1.22	3.34	291.41	0.16
1748.64	0.09	288.09	1748.60	1.22	-3.24	1.22	3.47	290.69	0.12
1811.94	0.58	350.10	1811.90	1.56	-3.35	1.56	3.69	294.93	0.86
1875.24	1.06	52.10	1875.19	2.23	-2.94	2.23	3.69	307.23	1.49
1938.54	1.81	51.74	1938.47	3.22	-1.69	3.22	3.63	332.29	1.18
2001.84	2.56	51.38	2001.73	4.72	0.20	4.72	4.72	2.48	1.18
2065.14	2.97	41.66	2064.95	6.83	2.40	6.83	7.24	19.37	0.98
2128.44	3.37	31.95	2128.16	9.63	4.48	9.63	10.62	24.92	1.06
2191.74	3.59	30.76	2191.34	12.92	6.48	12.92	14.45	26.62	0.36
2255.04	3.81	29.58	2254.51	16.45	8.53	16.45	18.53	27.40	0.36
2318.34	4.09	27.81	2317.66	20.27	10.62	20.27	22.88	27.64	0.49
2381.64	4.38	26.04	2380.78	24.45	12.73	24.45	27.56	27.52	0.50
2444.94	3.93	28.66	2443.92	28.52	14.84	28.52	32.15	27.48	0.78
2508.24	3.48	31.29	2507.09	32.06	16.87	32.06	36.23	27.75	0.76
2571.54	2.53	25.71	2570.30	34.96	18.48	34.96	39.54	27.85	1.57
2634.84	1.58	20.13	2633.56	37.04	19.38	37.04	41.80	27.62	1.53
2698.14	1.36	14.93	2696.84	38.58	19.87	38.58	43.40	27.25	0.41
2761.44	1.14	9.74	2760.12	39.93	20.17	39.93	44.73	26.81	0.39
2824.74	1.11	344.34	2823.41	41.13	20.12	41.13	45.79	26.06	0.78
2888.04	1.08	318.93	2886.70	42.18	19.56	42.18	46.49	24.88	0.76
2951.34	1.27	325.03	2949.98	43.20	18.76	43.20	47.10	23.47	0.35
3014.64	1.46	331.12	3013.27	44.48	17.97	44.48	47.97	22.00	0.37

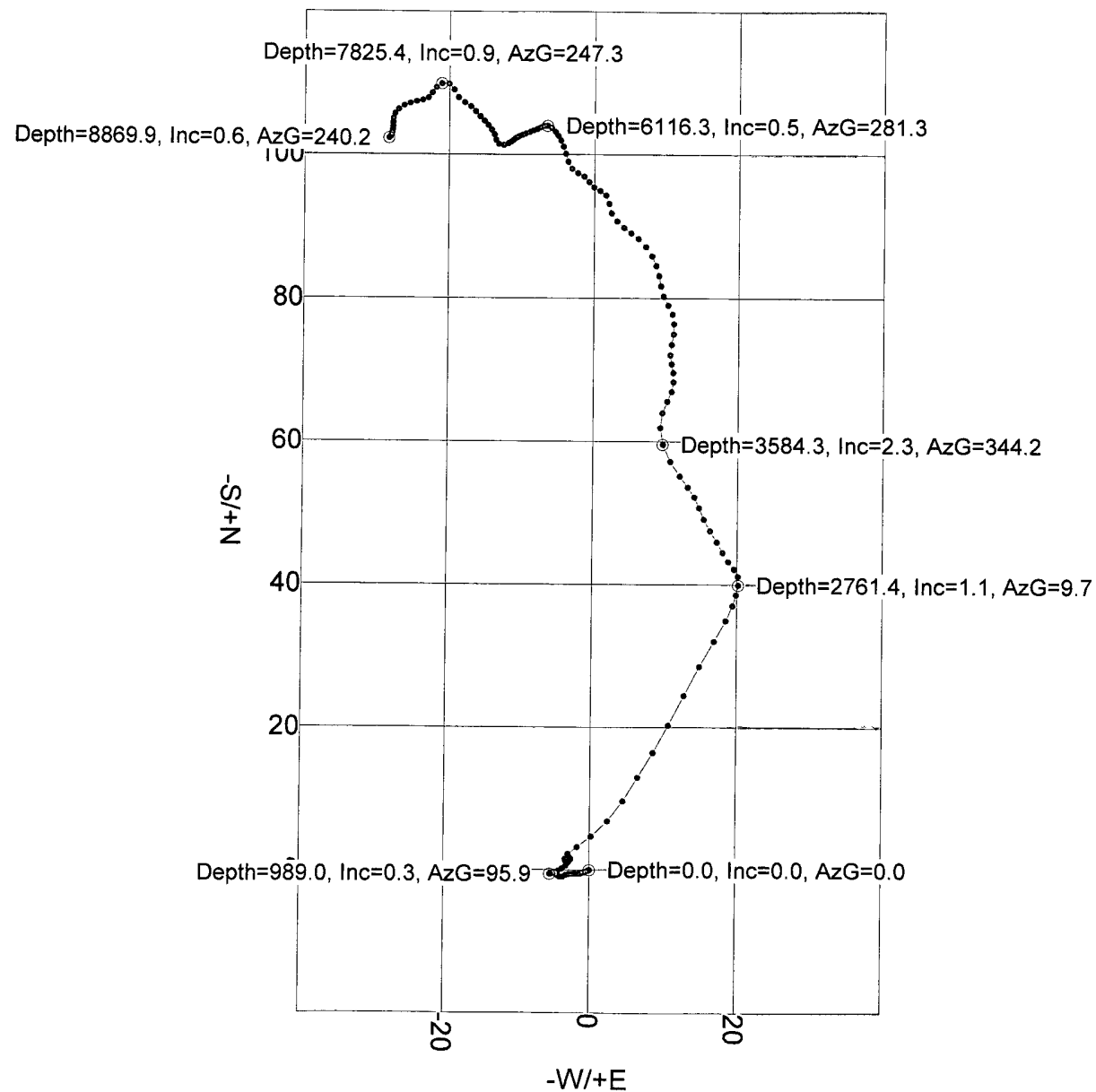
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3077.94	1.58	329.82	3076.54	45.94	17.14	45.94	49.03	20.46	0.20
3141.24	1.70	328.52	3139.82	47.49	16.22	47.49	50.18	18.85	0.20
3204.54	1.61	334.25	3203.09	49.09	15.34	49.09	51.43	17.35	0.30
3267.84	1.52	339.98	3266.37	50.68	14.67	50.68	52.76	16.14	0.28
3331.14	1.50	330.90	3329.65	52.20	13.97	52.20	54.04	14.99	0.38
3394.44	1.49	321.82	3392.93	53.57	13.06	53.57	55.14	13.70	0.37
3457.74	1.97	325.29	3456.20	55.11	11.94	55.11	56.39	12.22	0.78
3521.04	2.45	328.76	3519.45	57.16	10.61	57.16	58.14	10.52	0.79
3584.34	2.27	344.15	3582.70	59.52	9.57	59.52	60.29	9.13	1.04
3647.64	2.08	359.55	3645.95	61.88	9.22	61.88	62.56	8.47	0.97
3710.94	1.75	15.37	3709.22	63.96	9.46	63.96	64.66	8.42	0.98
3774.24	1.41	31.19	3772.49	65.56	10.12	65.56	66.33	8.78	0.86
3837.54	1.31	16.91	3835.77	66.92	10.74	66.92	67.77	9.12	0.56
3900.84	1.20	2.62	3899.06	68.27	10.98	68.27	69.15	9.14	0.52
3964.14	1.15	353.17	3962.35	69.57	10.93	69.57	70.42	8.93	0.32
4027.44	1.10	343.71	4025.63	70.78	10.69	70.78	71.59	8.59	0.30
4090.74	1.25	359.05	4088.92	72.06	10.51	72.06	72.82	8.29	0.55
4154.04	1.41	14.38	4152.20	73.50	10.69	73.50	74.28	8.27	0.61
4217.34	1.32	6.19	4215.49	74.98	10.96	74.98	75.78	8.31	0.33
4280.64	1.24	358.00	4278.77	76.39	11.01	76.39	77.18	8.20	0.32
4343.94	1.25	342.36	4342.06	77.74	10.78	77.74	78.48	7.89	0.54
4407.24	1.27	326.73	4405.34	78.98	10.19	78.98	79.64	7.35	0.54
4470.54	1.31	339.22	4468.62	80.24	9.55	80.24	80.81	6.78	0.45
4533.84	1.36	351.72	4531.91	81.66	9.18	81.66	82.18	6.41	0.46
4597.14	1.32	346.54	4595.19	83.11	8.90	83.11	83.59	6.11	0.20
4660.44	1.28	341.36	4658.47	84.49	8.51	84.49	84.92	5.75	0.19
4723.74	1.37	331.58	4721.76	85.83	7.92	85.83	86.20	5.27	0.38
4787.04	1.46	321.80	4785.04	87.13	7.06	87.13	87.42	4.63	0.40
4850.34	1.27	312.53	4848.32	88.24	6.05	88.24	88.44	3.92	0.46
4913.64	1.08	303.26	4911.61	89.03	5.04	89.03	89.18	3.24	0.42
4976.94	1.15	310.09	4974.89	89.77	4.05	89.77	89.86	2.59	0.24
5040.24	1.23	316.92	5038.18	90.68	3.10	90.68	90.73	1.96	0.26
5103.54	1.24	336.04	5101.47	91.80	2.36	91.80	91.83	1.47	0.65
5166.84	1.26	355.17	5164.75	93.12	2.02	93.12	93.14	1.24	0.66
5230.14	1.08	322.41	5228.04	94.29	1.60	94.29	94.30	0.97	1.08
5293.44	0.89	289.65	5291.33	94.92	0.77	94.92	94.93	0.47	0.92
5356.74	0.91	308.36	5354.62	95.40	-0.09	95.40	95.40	359.95	0.47
5420.04	0.93	327.07	5417.91	96.15	-0.76	96.15	96.15	359.55	0.48
5483.34	0.92	309.03	5481.21	96.90	-1.44	96.90	96.91	359.15	0.46

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5546.64	0.90	291.00	5544.50	97.40	-2.30	97.40	97.43	358.65	0.45
5609.94	1.00	318.13	5607.79	97.99	-3.13	97.99	98.04	358.17	0.72
5673.24	1.09	345.26	5671.08	98.98	-3.65	98.98	99.05	357.89	0.79
5736.54	0.99	342.18	5734.37	100.09	-3.97	100.09	100.17	357.73	0.18
5799.84	0.90	339.10	5797.66	101.07	-4.32	101.07	101.16	357.55	0.17
5863.14	0.76	333.72	5860.95	101.91	-4.68	101.91	102.02	357.37	0.24
5926.44	0.63	328.33	5924.25	102.58	-5.05	102.58	102.71	357.18	0.23
5989.74	0.64	320.58	5987.55	103.15	-5.46	103.15	103.30	356.97	0.14
6053.04	0.66	312.82	6050.84	103.68	-5.95	103.68	103.85	356.71	0.14
6116.34	0.54	281.29	6114.14	103.98	-6.51	103.98	104.19	356.42	0.55
6179.64	0.41	249.76	6177.44	103.96	-7.01	103.96	104.20	356.14	0.45
6242.94	0.47	247.19	6240.73	103.78	-7.47	103.78	104.05	355.88	0.10
6306.24	0.54	244.63	6304.03	103.55	-7.98	103.55	103.86	355.60	0.11
6369.54	0.51	246.76	6367.33	103.31	-8.50	103.31	103.66	355.30	0.05
6432.84	0.49	248.89	6430.63	103.11	-9.01	103.11	103.50	355.00	0.05
6496.14	0.50	249.77	6493.92	102.91	-9.52	102.91	103.35	354.71	0.03
6559.44	0.52	250.66	6557.22	102.72	-10.05	102.72	103.21	354.41	0.03
6622.74	0.43	240.75	6620.52	102.51	-10.53	102.51	103.05	354.13	0.19
6686.04	0.34	230.83	6683.82	102.28	-10.89	102.28	102.85	353.92	0.17
6749.34	0.34	231.07	6747.12	102.04	-11.18	102.04	102.65	353.75	0.01
6812.64	0.35	231.31	6810.42	101.80	-11.48	101.80	102.44	353.57	0.01
6875.94	0.51	243.21	6873.71	101.55	-11.88	101.55	102.24	353.33	0.30
6939.24	0.68	255.11	6937.01	101.33	-12.50	101.33	102.09	352.97	0.33
7002.54	0.69	302.39	7000.31	101.43	-13.18	101.43	102.29	352.60	0.87
7065.84	0.70	349.67	7063.60	102.02	-13.57	102.02	102.92	352.42	0.88
7129.14	0.72	337.22	7126.90	102.77	-13.80	102.77	103.69	352.35	0.24
7192.44	0.73	324.77	7190.19	103.46	-14.18	103.46	104.43	352.19	0.25
7255.74	0.73	320.69	7253.49	104.10	-14.67	104.10	105.13	351.98	0.08
7319.04	0.72	316.62	7316.78	104.70	-15.20	104.70	105.80	351.74	0.08
7382.34	0.79	318.16	7380.08	105.32	-15.76	105.32	106.49	351.49	0.12
7445.64	0.87	319.70	7443.37	106.01	-16.36	106.01	107.26	351.22	0.12
7508.94	0.91	309.37	7506.66	106.69	-17.06	106.69	108.05	350.91	0.26
7572.24	0.95	299.04	7569.95	107.26	-17.91	107.26	108.75	350.52	0.27
7635.54	1.06	319.24	7633.25	107.96	-18.75	107.96	109.58	350.15	0.58
7698.84	1.17	339.45	7696.53	109.01	-19.36	109.01	110.72	349.93	0.64
7762.14	1.02	293.35	7759.82	109.84	-20.10	109.84	111.67	349.63	1.37
7825.44	0.87	247.25	7823.12	109.88	-21.06	109.88	111.88	349.15	1.19
7888.74	0.86	225.74	7886.41	109.36	-21.84	109.36	111.52	348.70	0.51
7952.04	0.85	204.23	7949.70	108.60	-22.38	108.60	110.88	348.36	0.50

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
8015.34	0.82	232.13	8012.99	107.90	-22.93	107.90	110.31	348.00	0.64
8078.64	0.79	260.04	8076.29	107.54	-23.71	107.54	110.13	347.57	0.61
8141.94	0.81	256.83	8139.58	107.37	-24.57	107.37	110.14	347.11	0.08
8205.24	0.83	253.62	8202.88	107.14	-25.45	107.14	110.12	346.64	0.08
8268.54	0.83	242.45	8266.17	106.80	-26.29	106.80	109.98	346.17	0.26
8331.84	0.84	231.28	8329.46	106.29	-27.06	106.29	109.68	345.72	0.26
8395.14	0.70	206.71	8392.76	105.66	-27.60	105.66	109.20	345.36	0.56
8458.44	0.56	182.15	8456.05	105.00	-27.79	105.00	108.61	345.18	0.48
8521.74	0.50	183.70	8519.35	104.41	-27.82	104.41	108.05	345.08	0.10
8585.04	0.44	185.25	8582.65	103.90	-27.86	103.90	107.57	344.99	0.10
8648.34	0.37	186.80	8645.95	103.45	-27.90	103.45	107.15	344.91	0.10
8711.64	0.31	188.36	8709.25	103.07	-27.95	103.07	106.80	344.83	0.10
8774.94	0.25	189.91	8772.55	102.77	-28.00	102.77	106.51	344.76	0.10
8838.24	0.45	215.96	8835.84	102.43	-28.17	102.43	106.23	344.62	0.40
8869.90	0.57	240.24	8867.50	102.25	-28.38	102.25	106.12	344.49	0.77



Vaughn Energy Services
Fort Worth, Texas
817-741-3610
Surveyor: Ray Seago
SE Lusk Fed Com 33 2H / API 30-025-40255



VES Survey Date: 01/25/2012



Cimarex Energy Co.

Location Lea County, NM
Field (SE Lusk) Sec 33, T19S, R32E
Facility SE Lusk 33 Fed Com No 2H

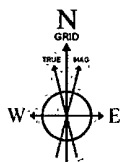
Slot No 2H SHL
Well No 2H
Wellbore No 2H PWB



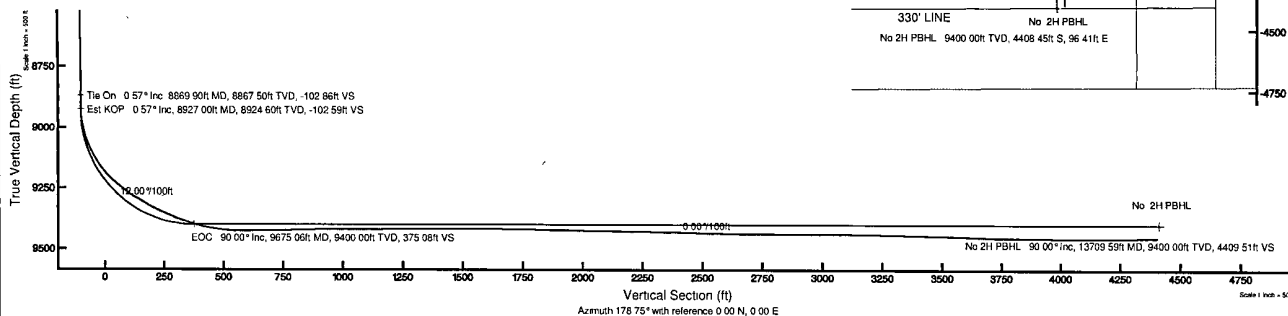
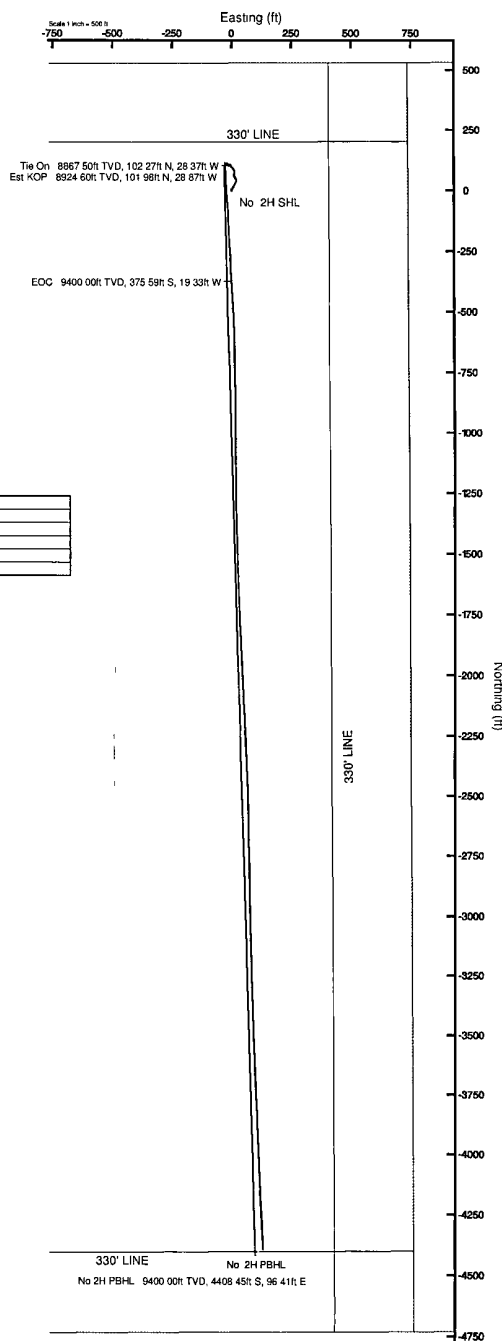
Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	8869.90	0.570	240.240	8867.50	102.27	-28.37	-102.86
Est KOP	8927.00	0.570	240.240	8924.60	101.98	-28.87	-102.59
EOC	9675.06	90.000	178.356	9400.00	-375.59	-19.33	375.08
No 2H PBHL	13709.59	90.000	178.356	9400.00	-4408.45	96.41	4409.51

SUR: A-33-19s-32e, 530/N & 737/E
BHL: P-33-19s-32e, 4929/N & 609/E
API # 30-025-40255

Plot reference wellpath is Plan #1	
True vertical depths are referenced to Rig on No. 5H SHL (KB)	Grid System: NAD83 / TM New Mexico SP, Eastern Zone (3001) US feet
Measured depths are referenced to Rig on No. 5H SHL (KB)	North Reference: Grid north
Rig on No. 5H SHL (KB) to Mean Sea Level: 3577 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot No. 2H SHL): -3557 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gentry on 1/26/2012



BGGM (1945 0 to 2012 0) Dip 60.54° Field 48890.9 nT
Magnetic North is 7.78 degrees East of True North (at 3/28/2011)
Grid North is 0.31 degrees East of True North
To correct azimuth from True to Grid subtract 0.31 degrees
To correct azimuth from Magnetic to Grid add 7.48 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.48 = 97.48





Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Lea County, NM	Well	No. 2H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.2H AWB
Facility	SE Lusk 33 Fed Com No. 2H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.999944	Report Generated	2/6/2012 at 8:33:18 AM
Convergence at slot	0.31° East	Database/Source file	WA Midland/No.2H_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	716321.10	590723.40	32°37'21.586"N	103°45'53.920"W
Facility Reference Pt			716321.10	590723.40	32°37'21.586"N	103°45'53.920"W
Field Reference Pt			716321.10	590723.40	32°37'21.586"N	103°45'53.920"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 5H SHL (KB) to GL	20.00ft
Horizontal Reference Pt	Slot	Rig on No. 5H SHL (KB) to Mean Sea Level	3577.00ft
Vertical Reference Pt	Rig on No. 5H SHL (KB)	Rig on No. 5H SHL (KB) to Mud Line at Slot (No. 2H SHL)	20.00ft
MD Reference Pt	Rig on No. 5H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	178.75°



Actual Wellpath Report

No.2H AWP
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Lea County, NM	Well	No. 2H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.2H AWP
Facility	SE Lusk 33 Fed Com No. 2H		

WELLPATH DATA (235 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	248.780	0.00	0.00	0.00	0.00	716321.10	590723.40	32°37'21.586"N	103°45'53.920"W	0.00	
39.54	0.400	248.780	39.54	0.05	-0.05	-0.13	716320.97	590723.35	32°37'21.585"N	103°45'53.922"W	1.01	
102.84	0.290	233.790	102.84	0.21	-0.22	-0.46	716320.64	590723.18	32°37'21.584"N	103°45'53.926"W	0.22	
166.14	0.350	257.160	166.14	0.34	-0.36	-0.78	716320.32	590723.04	32°37'21.582"N	103°45'53.929"W	0.22	
229.44	0.350	246.510	229.44	0.46	-0.48	-1.15	716319.95	590722.92	32°37'21.581"N	103°45'53.934"W	0.10	
292.74	0.360	286.410	292.74	0.47	-0.50	-1.52	716319.58	590722.90	32°37'21.581"N	103°45'53.938"W	0.38	
356.04	0.370	254.840	356.03	0.46	-0.50	-1.90	716319.20	590722.90	32°37'21.581"N	103°45'53.942"W	0.31	
419.34	0.380	275.110	419.33	0.48	-0.54	-2.31	716318.79	590722.86	32°37'21.581"N	103°45'53.947"W	0.21	
482.64	0.430	256.820	482.63	0.51	-0.57	-2.75	716318.35	590722.83	32°37'21.580"N	103°45'53.952"W	0.22	
545.94	0.440	247.130	545.93	0.65	-0.72	-3.21	716317.89	590722.68	32°37'21.579"N	103°45'53.958"W	0.12	
609.24	0.450	240.980	609.23	0.85	-0.93	-3.65	716317.45	590722.47	32°37'21.577"N	103°45'53.963"W	0.08	
672.54	0.420	292.280	672.53	0.88	-0.97	-4.08	716317.02	590722.43	32°37'21.576"N	103°45'53.968"W	0.60	
735.84	0.270	315.300	735.82	0.68	-0.77	-4.40	716316.70	590722.63	32°37'21.578"N	103°45'53.972"W	0.32	
799.14	0.420	330.890	799.12	0.36	-0.46	-4.62	716316.48	590722.94	32°37'21.581"N	103°45'53.974"W	0.28	
862.44	0.350	259.420	862.42	0.19	-0.30	-4.92	716316.18	590723.10	32°37'21.583"N	103°45'53.978"W	0.72	
925.74	0.450	241.870	925.72	0.33	-0.45	-5.33	716315.77	590722.95	32°37'21.582"N	103°45'53.982"W	0.25	
989.04	0.250	95.850	989.02	0.46	-0.58	-5.41	716315.69	590722.82	32°37'21.580"N	103°45'53.983"W	1.06	
1052.34	0.600	65.620	1052.32	0.35	-0.46	-4.97	716316.13	590722.94	32°37'21.581"N	103°45'53.978"W	0.64	
1115.64	0.670	64.250	1115.61	0.07	-0.16	-4.34	716316.76	590723.24	32°37'21.584"N	103°45'53.971"W	0.11	
1178.94	0.620	54.980	1178.91	-0.28	0.20	-3.72	716317.38	590723.60	32°37'21.588"N	103°45'53.964"W	0.18	
1242.24	0.580	45.710	1242.21	-0.69	0.62	-3.21	716317.89	590724.02	32°37'21.592"N	103°45'53.958"W	0.17	
1305.54	0.480	25.630	1305.50	-1.14	1.08	-2.87	716318.23	590724.48	32°37'21.597"N	103°45'53.954"W	0.33	
1368.84	0.370	5.540	1368.80	-1.58	1.52	-2.73	716318.37	590724.92	32°37'21.601"N	103°45'53.952"W	0.29	
1432.14	0.270	123.910	1432.10	-1.70	1.64	-2.59	716318.51	590725.04	32°37'21.602"N	103°45'53.950"W	0.87	
1495.44	0.170	242.280	1495.40	-1.57	1.52	-2.55	716318.55	590724.92	32°37'21.601"N	103°45'53.950"W	0.60	
1558.74	0.190	240.140	1558.70	-1.48	1.42	-2.72	716318.38	590724.82	32°37'21.600"N	103°45'53.952"W	0.03	
1622.04	0.210	238.010	1622.00	-1.37	1.31	-2.91	716318.19	590724.71	32°37'21.599"N	103°45'53.954"W	0.03	
1685.34	0.150	263.050	1685.30	-1.30	1.23	-3.09	716318.01	590724.63	32°37'21.598"N	103°45'53.956"W	0.15	
1748.64	0.090	288.090	1748.60	-1.31	1.24	-3.22	716317.88	590724.64	32°37'21.598"N	103°45'53.958"W	0.12	
1811.94	0.580	350.100	1811.90	-1.64	1.57	-3.33	716317.77	590724.97	32°37'21.601"N	103°45'53.959"W	0.86	
1875.24	1.060	52.100	1875.19	-2.31	2.25	-2.92	716318.18	590725.65	32°37'21.608"N	103°45'53.954"W	1.48	
1938.54	1.810	51.740	1938.47	-3.26	3.22	-1.67	716319.43	590726.62	32°37'21.618"N	103°45'53.939"W	1.18	
2001.84	2.560	51.380	2001.73	-4.72	4.73	0.22	716321.32	590728.13	32°37'21.632"N	103°45'53.917"W	1.19	
2065.14	2.970	41.660	2064.95	-6.78	6.83	2.41	716323.51	590730.23	32°37'21.653"N	103°45'53.891"W	0.98	
2128.44	3.370	31.950	2128.16	-9.54	9.64	4.49	716325.59	590733.04	32°37'21.681"N	103°45'53.867"W	1.06	
2191.74	3.590	30.760	2191.34	-12.77	12.92	6.49	716327.58	590736.32	32°37'21.713"N	103°45'53.843"W	0.37	
2255.04	3.810	29.580	2254.51	-16.26	16.45	8.54	716329.64	590739.85	32°37'21.748"N	103°45'53.819"W	0.37	
2318.34	4.090	27.810	2317.66	-20.04	20.28	10.63	716331.73	590743.68	32°37'21.786"N	103°45'53.795"W	0.48	
2381.64	4.380	26.040	2380.79	-24.16	24.45	12.74	716333.84	590747.84	32°37'21.827"N	103°45'53.770"W	0.50	
2444.94	3.930	28.660	2443.92	-28.19	28.52	14.84	716335.94	590751.92	32°37'21.867"N	103°45'53.745"W	0.77	
2508.24	3.480	31.290	2507.09	-31.69	32.07	16.88	716337.98	590755.46	32°37'21.902"N	103°45'53.721"W	0.76	
2571.54	2.530	25.710	2570.30	-34.55	34.97	18.49	716339.59	590758.36	32°37'21.931"N	103°45'53.702"W	1.57	
2634.84	1.580	20.130	2633.56	-36.61	37.04	19.39	716340.49	590760.44	32°37'21.951"N	103°45'53.691"W	1.53	
2698.14	1.360	14.930	2696.84	-38.15	38.59	19.89	716340.99	590761.99	32°37'21.966"N	103°45'53.685"W	0.41	
2761.44	1.140	9.740	2760.12	-39.49	39.94	20.19	716341.29	590763.83	32°37'21.980"N	103°45'53.682"W	0.39	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Lea County, NM	Well	No. 2H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.2H AWP
Facility	SE Lusk 33 Fed Com No. 2H		

WELLPATH DATA (235 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2824.74	1.110	344.340	2823.41	-40.70	41.15	20.13	716341.23	590764.54	32°37'21.992"N	103°45'53.682"W	0.78	
2888.04	1.080	318.930	2886.70	-41.75	42.19	19.57	716340.67	590765.58	32°37'22.002"N	103°45'53.689"W	0.76	
2951.34	1.270	325.030	2949.99	-42.79	43.21	18.78	716339.88	590766.61	32°37'22.012"N	103°45'53.698"W	0.36	
3014.64	1.460	331.120	3013.27	-44.09	44.49	17.98	716339.08	590767.89	32°37'22.025"N	103°45'53.707"W	0.38	
3077.94	1.580	329.820	3076.54	-45.57	45.95	17.16	716338.26	590769.35	32°37'22.039"N	103°45'53.717"W	0.20	
3141.24	1.700	328.520	3139.82	-47.14	47.51	16.23	716337.33	590770.91	32°37'22.055"N	103°45'53.727"W	0.20	
3204.54	1.610	334.250	3203.09	-48.76	49.11	15.35	716336.45	590772.51	32°37'22.071"N	103°45'53.738"W	0.30	
3267.84	1.520	339.980	3266.37	-50.37	50.70	14.68	716335.78	590774.10	32°37'22.087"N	103°45'53.745"W	0.29	
3331.14	1.500	330.900	3329.65	-51.89	52.21	13.99	716335.09	590775.61	32°37'22.102"N	103°45'53.753"W	0.38	
3394.44	1.490	321.820	3392.93	-53.28	53.58	13.07	716334.17	590776.98	32°37'22.115"N	103°45'53.764"W	0.37	
3457.74	1.970	325.290	3456.20	-54.85	55.12	11.95	716333.05	590778.52	32°37'22.131"N	103°45'53.777"W	0.78	
3521.04	2.450	328.760	3519.45	-56.93	57.18	10.63	716331.72	590780.57	32°37'22.151"N	103°45'53.792"W	0.79	
3584.34	2.270	344.150	3582.70	-59.32	59.54	9.58	716330.68	590782.94	32°37'22.174"N	103°45'53.804"W	1.04	
3647.64	2.080	359.550	3645.95	-61.68	61.89	9.23	716330.33	590785.29	32°37'22.198"N	103°45'53.808"W	0.97	
3710.94	1.750	15.370	3709.22	-63.75	63.97	9.48	716330.58	590787.37	32°37'22.218"N	103°45'53.805"W	0.98	
3774.24	1.410	31.190	3772.49	-65.34	65.57	10.14	716331.24	590788.97	32°37'22.234"N	103°45'53.798"W	0.87	
3837.54	1.310	16.910	3835.77	-66.68	66.93	10.75	716331.85	590790.33	32°37'22.247"N	103°45'53.790"W	0.56	
3900.84	1.200	2.620	3899.06	-68.03	68.29	10.99	716332.09	590791.68	32°37'22.261"N	103°45'53.787"W	0.52	
3964.14	1.150	353.170	3962.35	-69.32	69.58	10.95	716332.05	590792.97	32°37'22.274"N	103°45'53.788"W	0.32	
4027.44	1.100	343.710	4025.63	-70.54	70.79	10.70	716331.80	590794.19	32°37'22.286"N	103°45'53.791"W	0.30	
4090.74	1.250	359.050	4088.92	-71.82	72.07	10.52	716331.62	590795.46	32°37'22.298"N	103°45'53.793"W	0.55	
4154.04	1.410	14.380	4152.20	-73.26	73.51	10.70	716331.80	590796.91	32°37'22.312"N	103°45'53.790"W	0.61	
4217.34	1.320	6.190	4215.49	-74.73	74.99	10.97	716332.07	590798.39	32°37'22.327"N	103°45'53.787"W	0.34	
4280.64	1.240	358.000	4278.77	-76.14	76.40	11.03	716332.13	590799.79	32°37'22.341"N	103°45'53.786"W	0.32	
4343.94	1.250	342.360	4342.06	-77.49	77.74	10.79	716331.89	590801.14	32°37'22.354"N	103°45'53.789"W	0.54	
4407.24	1.270	326.730	4405.34	-78.74	78.99	10.20	716331.30	590802.38	32°37'22.367"N	103°45'53.796"W	0.54	
4470.54	1.310	339.220	4468.62	-80.02	80.25	9.56	716330.66	590803.64	32°37'22.379"N	103°45'53.803"W	0.45	
4533.84	1.360	351.720	4531.91	-81.45	81.67	9.19	716330.29	590805.06	32°37'22.393"N	103°45'53.808"W	0.47	
4597.14	1.320	346.540	4595.19	-82.91	83.12	8.92	716330.01	590806.52	32°37'22.408"N	103°45'53.811"W	0.20	
4660.44	1.280	341.360	4658.47	-84.29	84.50	8.52	716329.62	590807.90	32°37'22.421"N	103°45'53.815"W	0.20	
4723.74	1.370	331.580	4721.76	-85.64	85.84	7.93	716329.03	590809.23	32°37'22.435"N	103°45'53.822"W	0.38	
4787.04	1.460	321.800	4785.04	-86.96	87.14	7.07	716328.17	590810.53	32°37'22.447"N	103°45'53.832"W	0.41	
4850.34	1.270	312.530	4848.32	-88.09	88.24	6.06	716327.16	590811.64	32°37'22.459"N	103°45'53.844"W	0.46	
4913.64	1.080	303.260	4911.61	-88.91	89.04	5.04	716326.14	590812.44	32°37'22.466"N	103°45'53.856"W	0.42	
4976.94	1.150	310.090	4974.90	-89.67	89.78	4.06	716325.16	590813.18	32°37'22.474"N	103°45'53.867"W	0.24	
5040.24	1.230	316.920	5038.18	-90.60	90.69	3.11	716324.21	590814.08	32°37'22.483"N	103°45'53.878"W	0.26	
5103.54	1.240	336.040	5101.47	-91.73	91.81	2.37	716323.47	590815.20	32°37'22.494"N	103°45'53.887"W	0.65	
5166.84	1.260	355.170	5164.75	-93.06	93.13	2.03	716323.13	590816.52	32°37'22.507"N	103°45'53.891"W	0.66	
5230.14	1.080	322.410	5228.04	-94.24	94.29	1.61	716322.71	590817.69	32°37'22.519"N	103°45'53.895"W	1.08	
5293.44	0.890	289.650	5291.33	-94.89	94.93	0.78	716321.88	590818.33	32°37'22.525"N	103°45'53.905"W	0.92	
5356.74	0.910	308.360	5354.62	-95.39	95.41	-0.08	716321.02	590818.80	32°37'22.530"N	103°45'53.915"W	0.46	
5420.04	0.930	327.070	5417.92	-96.15	96.15	-0.75	716320.35	590819.55	32°37'22.537"N	103°45'53.923"W	0.47	
5483.34	0.920	309.030	5481.21	-96.91	96.90	-1.42	716319.68	590820.30	32°37'22.545"N	103°45'53.931"W	0.46	
5546.64	0.900	291.000	5544.50	-97.43	97.40	-2.28	716318.82	590820.80	32°37'22.550"N	103°45'53.941"W	0.45	
5609.94	1.000	318.130	5607.79	-98.04	97.99	-3.12	716317.98	590821.39	32°37'22.555"N	103°45'53.950"W	0.72	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Lea County, NM	Well	No. 2H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.2H AWB
Facility	SE Lusk 33 Fed Com No. 2H		

WELLPATH DATA (235 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5673.24	1.090	345.260	5671.08	-99.04	98.98	-3.64	716317.46	590822.38	32°37'22.565"N	103°45'53.956"W	0.79	
5736.54	0.990	342.180	5734.37	-100.15	100.09	-3.96	716317.14	590823.48	32°37'22.576"N	103°45'53.960"W	0.18	
5799.84	0.900	339.100	5797.66	-101.14	101.07	-4.30	716316.80	590824.47	32°37'22.586"N	103°45'53.964"W	0.16	
5863.14	0.760	333.720	5860.95	-101.99	101.91	-4.67	716316.43	590825.31	32°37'22.594"N	103°45'53.968"W	0.25	
5926.44	0.630	328.330	5924.25	-102.67	102.59	-5.03	716316.07	590825.98	32°37'22.601"N	103°45'53.973"W	0.23	
5989.74	0.640	320.580	5987.55	-103.25	103.16	-5.44	716315.66	590826.55	32°37'22.607"N	103°45'53.977"W	0.14	
6053.04	0.660	312.820	6050.84	-103.78	103.68	-5.93	716315.17	590827.07	32°37'22.612"N	103°45'53.983"W	0.14	
6116.34	0.540	281.290	6114.14	-104.10	103.98	-6.49	716314.61	590827.38	32°37'22.615"N	103°45'53.990"W	0.55	
6179.64	0.410	249.760	6177.44	-104.09	103.96	-7.00	716314.10	590827.36	32°37'22.615"N	103°45'53.995"W	0.45	
6242.94	0.470	247.190	6240.74	-103.92	103.78	-7.45	716313.65	590827.18	32°37'22.613"N	103°45'54.001"W	0.10	
6306.24	0.540	244.630	6304.03	-103.70	103.55	-7.96	716313.14	590826.95	32°37'22.611"N	103°45'54.007"W	0.12	
6369.54	0.510	246.760	6367.33	-103.48	103.32	-8.49	716312.61	590826.71	32°37'22.608"N	103°45'54.013"W	0.06	
6432.84	0.490	248.890	6430.63	-103.28	103.11	-9.00	716312.10	590826.50	32°37'22.606"N	103°45'54.019"W	0.04	
6496.14	0.500	249.770	6493.93	-103.10	102.91	-9.51	716311.59	590826.31	32°37'22.604"N	103°45'54.025"W	0.02	
6559.44	0.520	250.660	6557.22	-102.92	102.72	-10.04	716311.06	590826.12	32°37'22.603"N	103°45'54.031"W	0.03	
6622.74	0.430	240.750	6620.52	-102.72	102.51	-10.52	716310.58	590825.91	32°37'22.601"N	103°45'54.037"W	0.19	
6686.04	0.340	230.830	6683.82	-102.49	102.28	-10.87	716310.23	590825.67	32°37'22.598"N	103°45'54.041"W	0.18	
6749.34	0.340	231.070	6747.12	-102.26	102.04	-11.16	716309.94	590825.44	32°37'22.596"N	103°45'54.044"W	0.00	
6812.64	0.350	231.310	6810.42	-102.03	101.80	-11.46	716309.64	590825.20	32°37'22.594"N	103°45'54.048"W	0.02	
6875.94	0.510	243.210	6873.71	-101.79	101.55	-11.86	716309.24	590824.95	32°37'22.591"N	103°45'54.052"W	0.29	
6939.24	0.680	255.110	6937.01	-101.58	101.33	-12.48	716308.62	590824.72	32°37'22.589"N	103°45'54.060"W	0.33	
7002.54	0.690	302.390	7000.31	-101.70	101.44	-13.16	716307.94	590824.83	32°37'22.590"N	103°45'54.068"W	0.87	
7065.84	0.700	349.670	7063.60	-102.30	102.02	-13.55	716307.55	590825.42	32°37'22.596"N	103°45'54.072"W	0.88	
7129.14	0.720	337.220	7126.90	-103.05	102.77	-13.78	716307.32	590826.16	32°37'22.603"N	103°45'54.075"W	0.25	
7192.44	0.730	324.770	7190.19	-103.75	103.47	-14.16	716306.94	590826.86	32°37'22.610"N	103°45'54.079"W	0.25	
7255.74	0.730	320.690	7253.49	-104.40	104.11	-14.65	716306.45	590827.50	32°37'22.617"N	103°45'54.085"W	0.08	
7319.04	0.720	316.620	7316.78	-105.02	104.71	-15.18	716305.92	590828.10	32°37'22.623"N	103°45'54.091"W	0.08	
7382.34	0.790	318.160	7380.08	-105.64	105.32	-15.74	716305.36	590828.72	32°37'22.629"N	103°45'54.098"W	0.12	
7445.64	0.870	319.700	7443.37	-106.35	106.01	-16.35	716304.75	590829.41	32°37'22.636"N	103°45'54.105"W	0.13	
7508.94	0.910	309.370	7506.66	-107.05	106.70	-17.05	716304.05	590830.09	32°37'22.642"N	103°45'54.113"W	0.26	
7572.24	0.950	299.040	7569.96	-107.64	107.27	-17.89	716303.21	590830.67	32°37'22.648"N	103°45'54.123"W	0.27	
7635.54	1.060	319.240	7633.25	-108.36	107.97	-18.73	716302.37	590831.37	32°37'22.655"N	103°45'54.132"W	0.58	
7698.84	1.170	339.450	7696.53	-109.42	109.02	-19.34	716301.76	590832.41	32°37'22.665"N	103°45'54.139"W	0.64	
7762.14	1.020	293.350	7759.82	-110.26	109.85	-20.09	716301.01	590833.24	32°37'22.674"N	103°45'54.148"W	1.37	
7825.44	0.870	247.250	7823.12	-110.32	109.89	-21.05	716300.05	590833.28	32°37'22.674"N	103°45'54.159"W	1.19	
7888.74	0.860	225.740	7886.41	-109.82	109.37	-21.83	716299.27	590832.76	32°37'22.669"N	103°45'54.169"W	0.51	
7952.04	0.850	204.230	7949.70	-109.07	108.61	-22.36	716298.74	590832.00	32°37'22.662"N	103°45'54.175"W	0.50	
8015.34	0.820	232.130	8013.00	-108.38	107.90	-22.91	716298.19	590831.30	32°37'22.655"N	103°45'54.181"W	0.64	
8078.64	0.790	260.040	8076.29	-108.04	107.55	-23.70	716297.40	590830.94	32°37'22.651"N	103°45'54.191"W	0.62	
8141.94	0.810	256.830	8139.58	-107.88	107.37	-24.57	716296.53	590830.77	32°37'22.649"N	103°45'54.201"W	0.08	
8205.24	0.830	253.620	8202.88	-107.67	107.14	-25.44	716295.66	590830.53	32°37'22.647"N	103°45'54.211"W	0.08	
8268.54	0.830	242.450	8266.17	-107.35	106.80	-26.29	716294.81	590830.19	32°37'22.644"N	103°45'54.221"W	0.26	
8331.84	0.840	231.280	8329.46	-106.86	106.30	-27.06	716294.04	590829.69	32°37'22.639"N	103°45'54.230"W	0.26	
8395.14	0.700	206.710	8392.76	-106.24	105.66	-27.59	716293.51	590829.06	32°37'22.633"N	103°45'54.236"W	0.56	
8458.44	0.560	182.150	8456.05	-105.59	105.01	-27.78	716293.32	590828.40	32°37'22.626"N	103°45'54.238"W	0.48	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Lea County, NM	Well	No. 2H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.2H AWB
Facility	SE Lusk 33 Fed Com No. 2H		

WELLPATH DATA (235 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8521.74	0.500	183.700	8519.35	-105.01	104.42	-27.81	716293.29	590827.82	32°37'22.620"N	103°45'54.239"W	0.10	
8585.04	0.440	185.250	8582.65	-104.49	103.90	-27.85	716293.25	590827.30	32°37'22.615"N	103°45'54.239"W	0.10	
8648.34	0.370	186.800	8645.95	-104.04	103.46	-27.90	716293.21	590826.85	32°37'22.611"N	103°45'54.240"W	0.11	
8711.64	0.310	188.360	8709.25	-103.67	103.09	-27.94	716293.16	590826.48	32°37'22.607"N	103°45'54.240"W	0.10	
8774.94	0.250	189.910	8772.55	-103.37	102.78	-27.99	716293.11	590826.18	32°37'22.604"N	103°45'54.241"W	0.10	
8838.24	0.450	215.960	8835.84	-103.04	102.44	-28.16	716292.94	590825.84	32°37'22.601"N	103°45'54.243"W	0.40	
8869.90	0.570	240.240	8867.50	-102.86	102.27	-28.37	716292.73	590825.66	32°37'22.599"N	103°45'54.245"W	0.77	
8909.00	0.100	303.700	8906.60	-102.79	102.19	-28.57	716292.53	590825.58	32°37'22.598"N	103°45'54.248"W	1.36	
8941.00	3.700	176.000	8938.58	-101.77	101.17	-28.52	716292.58	590824.57	32°37'22.588"N	103°45'54.247"W	11.76	
8972.00	7.700	172.700	8969.42	-98.71	98.11	-28.19	716292.91	590821.51	32°37'22.558"N	103°45'54.244"W	12.94	
9004.00	12.900	172.200	9000.89	-93.02	92.44	-27.43	716293.67	590815.84	32°37'22.502"N	103°45'54.235"W	16.25	
9036.00	17.300	175.000	9031.78	-84.72	84.16	-26.53	716294.57	590807.56	32°37'22.420"N	103°45'54.225"W	13.93	
9068.00	21.200	180.500	9061.99	-74.19	73.63	-26.17	716294.94	590797.03	32°37'22.316"N	103°45'54.221"W	13.43	
9100.00	25.300	178.400	9091.39	-61.56	61.00	-26.02	716295.08	590784.40	32°37'22.191"N	103°45'54.221"W	13.07	
9131.00	29.900	176.200	9118.85	-47.21	46.67	-25.33	716295.77	590770.06	32°37'22.049"N	103°45'54.213"W	15.20	
9163.00	34.000	175.300	9146.00	-30.30	29.78	-24.07	716297.04	590753.18	32°37'21.882"N	103°45'54.200"W	12.90	
9195.00	38.700	177.100	9171.77	-11.36	10.86	-22.83	716298.28	590734.26	32°37'21.694"N	103°45'54.186"W	15.06	
9227.00	42.600	176.700	9196.04	9.47	-9.95	-21.70	716299.41	590713.45	32°37'21.488"N	103°45'54.174"W	12.21	
9258.00	46.700	175.600	9218.09	31.23	-31.68	-20.23	716300.88	590691.72	32°37'21.273"N	103°45'54.159"W	13.46	
9290.00	50.600	175.800	9239.23	55.21	-55.63	-18.43	716302.68	590667.78	32°37'21.036"N	103°45'54.139"W	12.20	
9312.00	53.400	177.200	9252.77	72.53	-72.93	-17.37	716303.73	590650.47	32°37'20.865"N	103°45'54.128"W	13.68	
9344.00	56.500	177.500	9271.14	98.72	-99.10	-16.16	716304.94	590624.31	32°37'20.606"N	103°45'54.115"W	9.72	
9375.00	58.600	177.800	9287.78	124.87	-125.23	-15.09	716306.01	590598.18	32°37'20.347"N	103°45'54.104"W	6.82	
9407.00	59.700	177.200	9304.19	152.34	-152.68	-13.89	716307.21	590570.73	32°37'20.076"N	103°45'54.092"W	3.80	
9438.00	62.000	176.900	9319.28	179.40	-179.71	-12.50	716308.60	590543.70	32°37'19.808"N	103°45'54.077"W	7.47	
9470.00	63.600	175.800	9333.91	207.83	-208.12	-10.68	716310.42	590515.30	32°37'19.527"N	103°45'54.058"W	5.86	
9502.00	66.400	176.600	9347.43	236.80	-237.05	-8.76	716312.34	590486.36	32°37'19.241"N	103°45'54.037"W	9.04	
9533.00	66.800	176.500	9359.75	265.23	-265.45	-7.05	716314.05	590457.97	32°37'18.960"N	103°45'54.019"W	1.32	
9565.00	68.200	176.800	9371.99	294.77	-294.96	-5.32	716315.78	590428.46	32°37'18.668"N	103°45'54.001"W	4.46	
9596.00	70.400	176.700	9382.95	323.75	-323.91	-3.68	716317.42	590399.51	32°37'18.381"N	103°45'53.983"W	7.10	
9628.00	72.500	176.500	9393.13	354.07	-354.19	-1.88	716319.22	590369.23	32°37'18.081"N	103°45'53.964"W	6.59	
9659.00	74.800	176.800	9401.85	383.79	-383.89	-0.14	716320.96	590339.53	32°37'17.787"N	103°45'53.946"W	7.48	
9690.00	77.100	176.200	9409.38	413.84	-413.90	1.69	716322.79	590309.52	32°37'17.490"N	103°45'53.926"W	7.65	
9722.00	79.500	176.400	9415.87	445.14	-445.17	3.72	716324.82	590278.26	32°37'17.181"N	103°45'53.905"W	7.52	
9753.00	82.100	176.300	9420.82	475.72	-475.71	5.66	716326.76	590247.72	32°37'16.879"N	103°45'53.884"W	8.39	
9786.00	84.600	176.500	9424.65	508.46	-508.42	7.72	716328.82	590215.01	32°37'16.555"N	103°45'53.862"W	7.60	
9818.00	87.200	177.200	9426.93	540.36	-540.28	9.47	716330.57	590183.15	32°37'16.239"N	103°45'53.843"W	8.41	
9849.00	89.400	177.600	9427.85	571.34	-571.24	10.88	716331.98	590152.20	32°37'15.933"N	103°45'53.829"W	7.21	
9882.00	90.700	179.500	9427.82	604.34	-604.22	11.72	716332.81	590119.21	32°37'15.607"N	103°45'53.821"W	6.98	
9913.00	90.800	179.500	9427.42	635.33	-635.22	11.99	716333.08	590088.22	32°37'15.300"N	103°45'53.820"W	0.32	
9977.00	90.900	179.500	9426.47	699.32	-699.21	12.54	716333.64	590024.23	32°37'14.667"N	103°45'53.817"W	0.16	
10040.00	91.300	179.100	9425.26	762.30	-762.19	13.31	716334.41	589961.25	32°37'14.044"N	103°45'53.812"W	0.90	
10104.00	91.500	178.700	9423.70	826.28	-826.16	14.54	716335.64	589897.29	32°37'13.411"N	103°45'53.802"W	0.70	
10167.00	91.100	180.000	9422.27	889.26	-889.14	15.26	716336.36	589834.31	32°37'12.787"N	103°45'53.797"W	2.16	
10230.00	90.600	179.700	9421.33	952.24	-952.13	15.42	716336.52	589771.32	32°37'12.164"N	103°45'53.799"W	0.93	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Lea County, NM	Well	No. 2H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.2H AWB
Facility	SE Lusk 33 Fed Com No. 2H		

WELLPATH DATA (235 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10293.00	89.800	179.800	9421.11	1015.23	-1015.13	15.70	716336.80	589708.33	32°37'11.541"N	103°45'53.800"W	1.28	
10357.00	90.000	180.000	9421.22	1079.22	-1079.13	15.81	716336.91	589644.33	32°37'10.908"N	103°45'53.803"W	0.44	
10420.00	90.300	179.500	9421.06	1142.21	-1142.13	16.08	716337.18	589581.34	32°37'10.284"N	103°45'53.803"W	0.93	
10483.00	90.700	179.600	9420.51	1205.20	-1205.13	16.58	716337.68	589518.34	32°37'09.661"N	103°45'53.802"W	0.65	
10546.00	90.500	179.300	9419.85	1268.19	-1268.12	17.18	716338.28	589455.35	32°37'09.038"N	103°45'53.799"W	0.57	
10609.00	89.800	178.400	9419.68	1331.19	-1331.11	18.45	716339.55	589392.37	32°37'08.414"N	103°45'53.788"W	1.81	
10673.00	89.900	178.600	9419.85	1395.19	-1395.08	20.12	716341.22	589328.40	32°37'07.781"N	103°45'53.772"W	0.35	
10736.00	90.100	178.200	9419.85	1458.19	-1458.06	21.88	716342.98	589265.43	32°37'07.158"N	103°45'53.755"W	0.71	
10800.00	90.600	178.200	9419.46	1522.18	-1522.03	23.89	716344.99	589201.46	32°37'06.525"N	103°45'53.736"W	0.78	
10863.00	89.600	177.600	9419.35	1585.18	-1584.98	26.20	716347.30	589138.51	32°37'05.902"N	103°45'53.713"W	1.85	
10927.00	89.500	177.700	9419.85	1649.16	-1648.93	28.82	716349.92	589074.57	32°37'05.269"N	103°45'53.686"W	0.22	
10990.00	88.900	177.800	9420.73	1712.15	-1711.87	31.30	716352.40	589011.63	32°37'04.646"N	103°45'53.661"W	0.97	
11054.00	89.000	177.300	9421.91	1776.12	-1775.80	34.03	716355.13	588947.70	32°37'04.013"N	103°45'53.633"W	0.80	
11117.00	89.300	177.200	9422.84	1839.09	-1838.72	37.05	716358.15	588884.78	32°37'03.391"N	103°45'53.602"W	0.50	
11180.00	88.700	177.700	9423.94	1902.07	-1901.65	39.86	716360.95	588821.86	32°37'02.768"N	103°45'53.573"W	1.24	
11243.00	88.900	177.600	9425.26	1965.04	-1964.58	42.44	716363.54	588758.93	32°37'02.145"N	103°45'53.547"W	0.35	
11307.00	89.100	177.600	9426.38	2029.02	-2028.52	45.12	716366.22	588695.00	32°37'01.512"N	103°45'53.519"W	0.31	
11370.00	89.400	177.100	9427.20	2091.99	-2091.44	48.03	716369.13	588632.08	32°37'00.890"N	103°45'53.489"W	0.93	
11433.00	88.900	177.500	9428.14	2154.97	-2154.37	51.00	716372.10	588569.16	32°37'00.267"N	103°45'53.459"W	1.02	
11496.00	89.400	176.900	9429.07	2217.94	-2217.28	54.08	716375.17	588506.24	32°36'59.644"N	103°45'53.427"W	1.24	
11560.00	88.800	177.000	9430.08	2281.90	-2281.19	57.48	716378.58	588442.35	32°36'59.012"N	103°45'53.391"W	0.95	
11623.00	89.000	177.200	9431.28	2344.86	-2344.09	60.67	716381.76	588379.44	32°36'58.389"N	103°45'53.357"W	0.45	
11687.00	88.600	177.700	9432.63	2408.83	-2408.02	63.52	716384.61	588315.52	32°36'57.757"N	103°45'53.328"W	1.00	
11750.00	88.600	178.100	9434.16	2471.80	-2470.95	65.82	716386.92	588252.59	32°36'57.134"N	103°45'53.305"W	0.63	
11813.00	88.800	179.200	9435.59	2534.79	-2533.92	67.31	716388.40	588189.63	32°36'56.511"N	103°45'53.292"W	1.77	
11877.00	89.000	178.800	9436.82	2598.77	-2597.90	68.42	716389.52	588125.65	32°36'55.878"N	103°45'53.283"W	0.70	
11940.00	89.200	179.600	9437.81	2661.76	-2660.88	69.30	716390.40	588062.67	32°36'55.254"N	103°45'53.276"W	1.31	
12004.00	89.500	179.500	9438.54	2725.75	-2724.88	69.81	716390.90	587998.68	32°36'54.621"N	103°45'53.274"W	0.49	
12067.00	89.400	178.600	9439.14	2788.75	-2787.87	70.85	716391.95	587935.70	32°36'53.998"N	103°45'53.266"W	1.44	
12131.00	89.600	178.800	9439.70	2852.75	-2851.85	72.30	716393.40	587871.72	32°36'53.365"N	103°45'53.253"W	0.44	
12194.00	89.800	179.400	9440.03	2915.74	-2914.84	73.29	716394.39	587808.73	32°36'52.741"N	103°45'53.246"W	1.00	
12257.00	90.100	178.500	9440.09	2978.74	-2977.83	74.45	716395.54	587745.75	32°36'52.118"N	103°45'53.236"W	1.51	
12321.00	90.200	179.200	9439.92	3042.74	-3041.81	75.73	716396.83	587681.76	32°36'51.485"N	103°45'53.225"W	1.10	
12384.00	89.700	178.500	9439.97	3105.74	-3104.80	76.99	716398.09	587618.78	32°36'50.862"N	103°45'53.214"W	1.37	
12448.00	89.400	177.900	9440.48	3169.74	-3168.77	79.01	716400.10	587554.82	32°36'50.229"N	103°45'53.195"W	1.05	
12511.00	88.600	179.100	9441.58	3232.72	-3231.73	80.65	716401.75	587491.85	32°36'49.605"N	103°45'53.179"W	2.29	
12575.00	88.900	178.500	9442.97	3296.71	-3295.70	81.99	716403.09	587427.89	32°36'48.972"N	103°45'53.168"W	1.05	
12637.00	88.500	177.700	9444.38	3358.69	-3357.65	84.05	716405.14	587365.94	32°36'48.359"N	103°45'53.147"W	1.44	
12701.00	88.600	178.300	9446.00	3422.66	-3421.59	86.28	716407.38	587302.01	32°36'47.727"N	103°45'53.125"W	0.95	
12764.00	89.000	178.300	9447.32	3485.65	-3484.55	88.15	716409.25	587239.05	32°36'47.104"N	103°45'53.107"W	0.63	
12827.00	87.900	177.500	9449.02	3548.61	-3547.48	90.46	716411.55	587176.12	32°36'46.481"N	103°45'53.084"W	2.16	
12889.00	88.200	177.500	9451.13	3610.56	-3609.39	93.16	716414.26	587114.22	32°36'45.868"N	103°45'53.057"W	0.48	
12953.00	88.500	177.700	9452.97	3674.52	-3673.31	95.84	716416.93	587050.31	32°36'45.236"N	103°45'53.029"W	0.56	
13017.00	88.800	177.400	9454.48	3738.49	-3737.23	98.57	716419.67	586986.39	32°36'44.603"N	103°45'53.001"W	0.66	
13080.00	89.200	177.500	9455.58	3801.47	-3800.16	101.38	716422.47	586923.46	32°36'43.980"N	103°45'52.973"W	0.65	



Actual Wellpath Report

No.2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 2H SHL
Area	Lea County, NM	Well	No. 2H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No.2H AWB
Facility	SE Lusk 33 Fed Com No. 2H		

WELLPATH DATA (235 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
13144.00	89.500	178.100	9456.31	3865.45	-3864.11	103.83	716424.93	586859.52	32°36'43.347"N	103°45'52.948"W	1.05	
13206.00	89.900	177.500	9456.63	3927.44	-3926.06	106.21	716427.31	586797.57	32°36'42.734"N	103°45'52.924"W	1.16	
13270.00	89.400	178.100	9457.02	3991.43	-3990.01	108.67	716429.76	586733.62	32°36'42.101"N	103°45'52.899"W	1.22	
13333.00	89.600	177.400	9457.57	4054.42	-4052.96	111.14	716432.24	586670.68	32°36'41.478"N	103°45'52.874"W	1.16	
13397.00	90.000	177.500	9457.80	4118.40	-4116.89	113.99	716435.08	586606.74	32°36'40.846"N	103°45'52.845"W	0.64	
13459.00	90.300	177.000	9457.63	4180.38	-4178.82	116.97	716438.06	586544.82	32°36'40.233"N	103°45'52.814"W	0.94	
13523.00	90.700	177.100	9457.08	4244.35	-4242.74	120.26	716441.35	586480.91	32°36'39.600"N	103°45'52.779"W	0.64	
13586.00	91.100	176.800	9456.09	4307.31	-4305.64	123.61	716444.70	586418.01	32°36'38.978"N	103°45'52.744"W	0.79	
13634.00	91.200	177.200	9455.12	4355.28	-4353.56	126.12	716447.22	586370.09	32°36'38.503"N	103°45'52.718"W	0.86	
13679.00	91.200	177.200	9454.18	4400.25	-4398.50	128.32	716449.41	586325.16	32°36'38.058"N	103°45'52.695"W	0.00	Proj to Bit

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No. 2H PBHL		9400.00	-4408.45	96.41	716417.50	586315.20	32°36'37.962"N	103°45'53.069"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.2H AWB Ref Wellpath: No.2H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	8909.00	Generic gyro - northseeking (Standard)	VES Gyro <39.54-8869.9>	No.2H AWB
8909.00	13679.00	NaviTrak (Standard)	MWD NaviTrak <8941-XXXX>	No.2H AWB