

# BONANZA CREEK ENERGY OPERATING

Well Name: **Antelope 41-44-31HZ**

Surface Location: Antelope 41-31 Pad Sec.31-T5N-R62W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

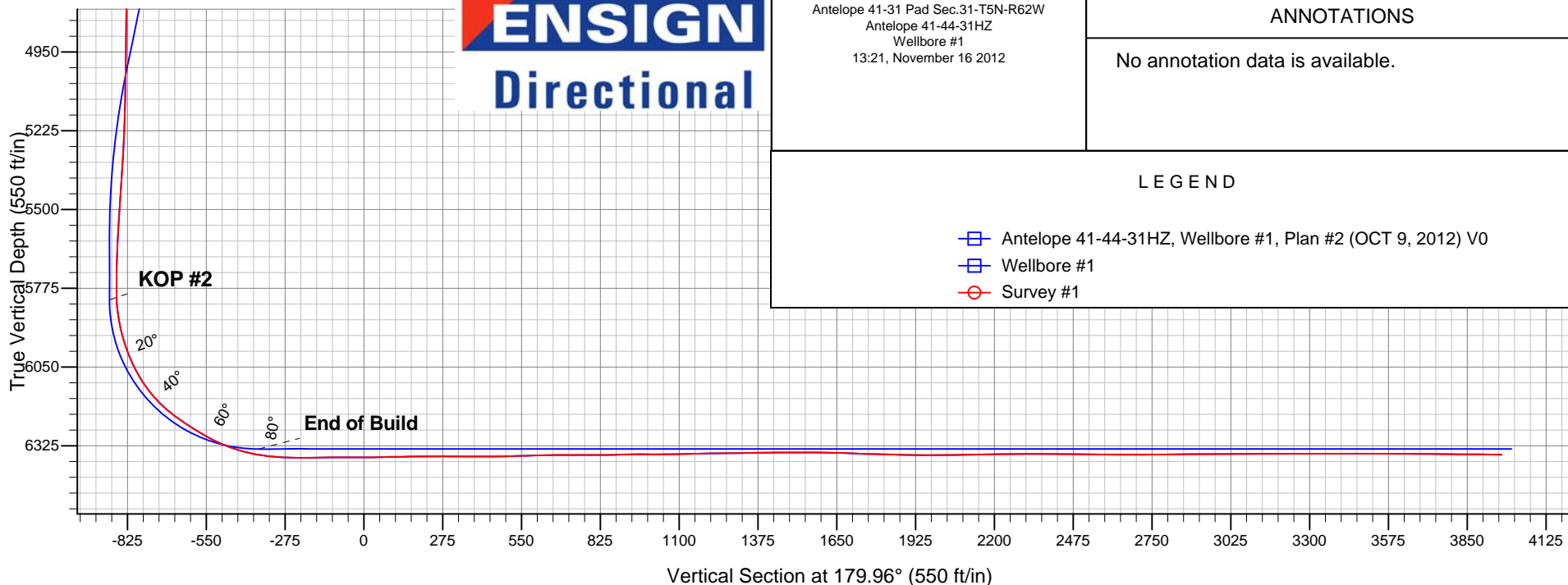
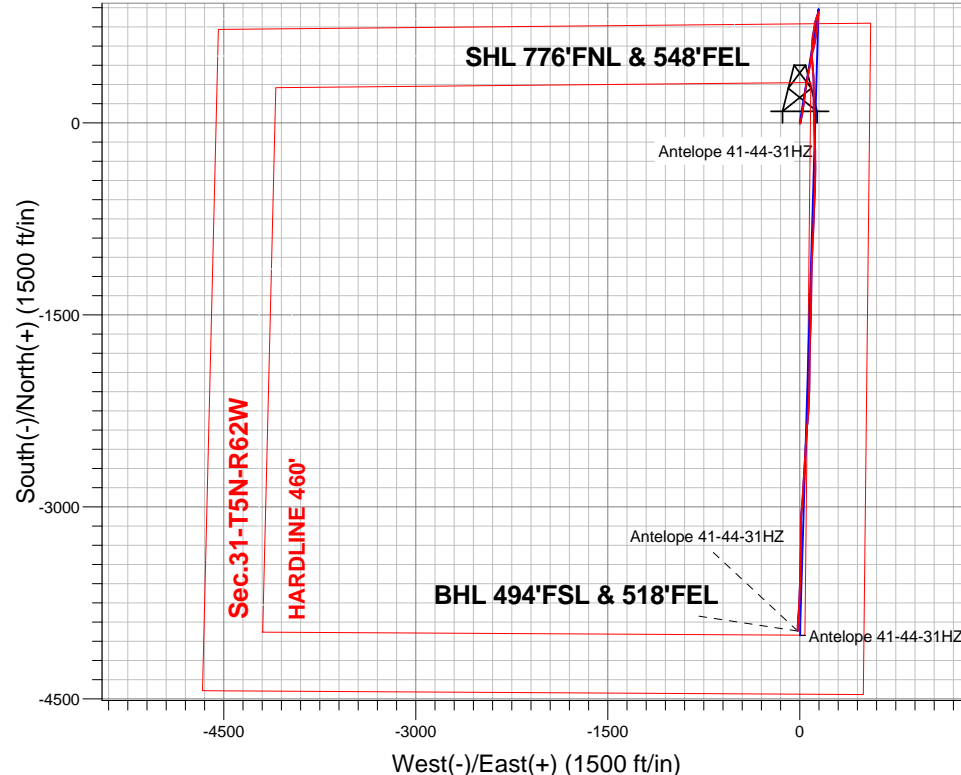
Ground Elevation: 4604.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1376500.79	3317978.12	40.361280	-104.358910	

Original Well Elev WELL @ 4619.0ft (Original Well Elev)

## FINAL SURVEY

Projected Bottom Hole Location  
11050'MD 6356'TVD 3970'S & 15'W of SHL  
89.3 degree Incl @ 182.1 degree AZM



Antelope 41-31 Pad Sec.31-T5N-R62W  
Antelope 41-44-31HZ  
Wellbore #1  
13:21, November 16 2012

### ANNOTATIONS

No annotation data is available.



# **BONANZA CREEK ENERGY OPERATING**

**SEC.31-T5N-R62W**

**Antelope 41-31 Pad Sec.31-T5N-R62W**

**Antelope 41-44-31HZ**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**16 November, 2012**

Survey										
	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	94.0	0.60	146.30	94.0	-0.4	0.3	0.4	0.64	0.64	0.00
	180.0	0.80	163.50	180.0	-1.4	0.7	1.4	0.33	0.23	20.00
	276.0	1.10	148.40	276.0	-2.8	1.4	2.8	0.40	0.31	-15.73
	365.0	0.80	153.70	365.0	-4.1	2.1	4.1	0.35	-0.34	5.96
	453.0	0.40	148.00	453.0	-4.9	2.5	4.9	0.46	-0.45	-6.48
	577.0	0.30	148.70	577.0	-5.6	2.9	5.5	0.08	-0.08	0.56
	700.0	1.90	19.20	699.9	-3.9	3.8	3.9	1.71	1.30	-105.28
	824.0	4.70	15.70	823.7	2.9	5.8	-3.0	2.26	2.26	-2.82
	948.0	8.00	9.50	946.9	16.3	8.6	-16.4	2.71	2.66	-5.00
	1,071.0	10.40	12.00	1,068.4	35.6	12.3	-35.7	1.98	1.95	2.03
	1,195.0	13.00	8.50	1,189.8	60.4	16.7	-60.4	2.17	2.10	-2.82
	1,317.0	13.60	8.10	1,308.5	88.2	20.8	-88.2	0.50	0.49	-0.33

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Site Antelope 41-31 Pad Sec.31-T5N-R62W
<b>Project:</b>	SEC.31-T5N-R62W	<b>TVD Reference:</b>	WELL @ 4619.0ft (Original Well Elev)
<b>Site:</b>	Antelope 41-31 Pad Sec.31-T5N-R62W	<b>MD Reference:</b>	WELL @ 4619.0ft (Original Well Elev)
<b>Well:</b>	Antelope 41-44-31HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,440.0	13.10	10.60	1,428.2	116.2	25.4	-116.2	0.62	-0.41	2.03	
1,563.0	13.40	7.90	1,547.9	144.0	29.9	-144.0	0.56	0.24	-2.20	
1,686.0	14.20	8.10	1,667.3	173.0	34.0	-173.1	0.65	0.65	0.16	
1,809.0	12.80	6.50	1,786.9	201.5	37.6	-201.5	1.18	-1.14	-1.30	
1,931.0	13.00	9.20	1,905.9	228.5	41.4	-228.5	0.52	0.16	2.21	
2,053.0	13.30	7.60	2,024.7	256.0	45.4	-255.9	0.39	0.25	-1.31	
2,176.0	12.80	7.60	2,144.5	283.5	49.1	-283.5	0.41	-0.41	0.00	
2,298.0	13.10	11.60	2,263.4	310.4	53.7	-310.4	0.77	0.25	3.28	
2,421.0	13.00	7.10	2,383.2	337.8	58.2	-337.8	0.83	-0.08	-3.66	
2,543.0	13.00	9.00	2,502.1	365.0	62.0	-365.0	0.35	0.00	1.56	
2,665.0	13.30	12.50	2,620.9	392.2	67.2	-392.2	0.70	0.25	2.87	
2,788.0	13.50	12.90	2,740.5	420.0	73.5	-420.0	0.18	0.16	0.33	
2,912.0	12.60	9.50	2,861.3	447.5	78.9	-447.5	0.95	-0.73	-2.74	
3,036.0	13.10	10.60	2,982.2	474.6	83.8	-474.6	0.45	0.40	0.89	
3,161.0	11.70	9.00	3,104.3	501.1	88.3	-501.0	1.15	-1.12	-1.28	
3,286.0	11.50	12.30	3,226.8	525.8	93.0	-525.7	0.55	-0.16	2.64	
3,412.0	13.50	15.00	3,349.8	552.3	99.5	-552.2	1.65	1.59	2.14	
3,536.0	16.50	13.90	3,469.5	583.3	107.4	-583.3	2.43	2.42	-0.89	
3,661.0	17.70	10.80	3,589.0	619.2	115.3	-619.2	1.21	0.96	-2.48	
3,786.0	16.80	10.40	3,708.4	655.7	122.1	-655.6	0.73	-0.72	-0.32	
3,911.0	15.30	10.60	3,828.5	689.6	128.4	-689.6	1.20	-1.20	0.16	
4,035.0	13.50	9.20	3,948.6	720.0	133.7	-720.0	1.48	-1.45	-1.13	
4,159.0	12.00	6.50	4,069.6	747.1	137.5	-747.0	1.30	-1.21	-2.18	
4,283.0	10.90	3.40	4,191.1	771.6	139.6	-771.6	1.02	-0.89	-2.50	
4,408.0	8.80	2.50	4,314.2	793.0	140.8	-792.9	1.68	-1.68	-0.72	
4,532.0	6.50	3.70	4,437.1	809.5	141.6	-809.4	1.86	-1.85	0.97	
4,656.0	4.00	359.00	4,560.6	820.8	142.0	-820.7	2.04	-2.02	-3.79	
4,782.0	1.30	0.40	4,686.4	826.6	141.9	-826.5	2.14	-2.14	1.11	
4,907.0	0.90	358.10	4,811.4	829.0	141.9	-828.9	0.32	-0.32	-1.84	
5,032.0	0.60	2.00	4,936.4	830.7	141.9	-830.6	0.24	-0.24	3.12	
5,156.0	0.70	15.30	5,060.4	832.0	142.1	-832.0	0.15	0.08	10.73	
5,282.0	1.90	25.90	5,186.4	834.7	143.2	-834.6	0.97	0.95	8.41	
5,408.0	3.40	2.50	5,312.2	840.3	144.3	-840.2	1.44	1.19	-18.57	
5,532.0	4.10	5.10	5,436.0	848.4	144.9	-848.3	0.58	0.56	2.10	
5,657.0	3.40	6.40	5,560.7	856.5	145.7	-856.4	0.56	-0.56	1.04	
5,782.0	1.50	2.80	5,685.6	861.8	146.2	-861.7	1.52	-1.52	-2.88	
5,816.0	1.50	356.00	5,719.6	862.7	146.2	-862.6	0.52	0.00	-20.00	
5,847.0	1.10	354.80	5,750.6	863.4	146.1	-863.3	1.29	-1.29	-3.87	
5,879.0	0.60	215.40	5,782.6	863.6	146.0	-863.5	5.01	-1.56	-435.63	
5,910.0	3.20	200.50	5,813.5	862.6	145.6	-862.5	8.47	8.39	-48.06	
5,941.0	6.20	196.40	5,844.4	860.2	144.8	-860.1	9.73	9.68	-13.23	
5,972.0	9.20	195.50	5,875.1	856.2	143.7	-856.1	9.68	9.68	-2.90	
6,003.0	12.30	197.50	5,905.6	850.7	142.0	-850.6	10.07	10.00	6.45	
6,035.0	15.60	198.50	5,936.7	843.3	139.6	-843.3	10.34	10.31	3.13	
6,066.0	18.90	199.40	5,966.3	834.6	136.6	-834.6	10.68	10.65	2.90	
6,097.0	21.70	200.10	5,995.3	824.5	133.0	-824.5	9.07	9.03	2.26	
6,128.0	24.30	198.50	6,023.9	813.1	129.0	-813.0	8.63	8.39	-5.16	
6,160.0	27.40	195.10	6,052.7	799.7	125.0	-799.7	10.73	9.69	-10.63	
6,191.0	30.70	192.00	6,079.8	785.1	121.5	-785.0	11.70	10.65	-10.00	
6,223.0	34.10	190.10	6,106.8	768.3	118.2	-768.2	11.09	10.63	-5.94	
6,254.0	37.90	188.80	6,131.8	750.3	115.2	-750.3	12.50	12.26	-4.19	
6,285.0	41.90	189.70	6,155.6	730.7	112.0	-730.6	13.04	12.90	2.90	
6,317.0	46.10	190.10	6,178.6	708.8	108.2	-708.7	13.15	13.13	1.25	
6,348.0	49.80	189.00	6,199.4	686.1	104.4	-686.1	12.22	11.94	-3.55	

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<b>Site:</b>	Antelope 41-31 Pad Sec.31-T5N-R62W	<b>MD Reference:</b>	WELL @ 4619.0ft (Original Well Elev)
<b>Well:</b>	Antelope 41-44-31HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

#### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,380.0	53.10	186.90	6,219.3	661.3	100.9	-661.3	11.52	10.31	-6.56
6,411.0	56.10	183.70	6,237.3	636.2	98.6	-636.1	12.82	9.68	-10.32
6,442.0	57.40	183.00	6,254.3	610.3	97.1	-610.2	4.60	4.19	-2.26
6,472.0	57.90	182.70	6,270.3	585.0	95.9	-584.9	1.87	1.67	-1.00
6,503.0	59.30	181.60	6,286.5	558.5	94.9	-558.5	5.44	4.52	-3.55
6,534.0	62.80	178.80	6,301.5	531.4	94.8	-531.4	13.78	11.29	-9.03
6,566.0	66.10	176.90	6,315.3	502.6	95.9	-502.5	11.62	10.31	-5.94
6,597.0	69.50	175.30	6,327.0	473.9	97.8	-473.9	11.96	10.97	-5.16
6,628.0	72.60	175.10	6,337.1	444.7	100.3	-444.7	10.02	10.00	-0.65
6,660.0	75.60	175.10	6,345.8	414.1	102.9	-414.0	9.38	9.38	0.00
6,691.0	78.30	175.30	6,352.8	384.0	105.4	-383.9	8.73	8.71	0.65
6,722.0	81.30	176.50	6,358.3	353.5	107.6	-353.5	10.40	9.68	3.87
6,754.0	85.30	179.00	6,362.1	321.8	108.9	-321.7	14.71	12.50	7.81
6,756.4	85.44	179.06	6,362.3	319.4	108.9	-319.3	6.34	5.86	2.42
<b>T1 460'FNL &amp; 500'FEL</b>									
6,783.0	87.00	179.70	6,364.0	292.9	109.2	-292.8	6.34	5.86	2.41
6,814.0	87.10	180.00	6,365.6	261.9	109.3	-261.9	1.02	0.32	0.97
6,845.0	89.60	179.70	6,366.5	230.9	109.3	-230.9	8.12	8.06	-0.97
6,877.0	90.70	179.30	6,366.4	198.9	109.6	-198.9	3.66	3.44	-1.25
6,905.0	91.00	179.70	6,366.0	170.9	109.9	-170.9	1.79	1.07	1.43
6,955.0	91.00	179.70	6,365.1	120.9	110.1	-120.9	0.00	0.00	0.00
6,983.0	89.70	177.60	6,365.0	92.9	110.8	-92.9	8.82	-4.64	-7.50
7,014.0	89.80	178.60	6,365.1	62.0	111.8	-61.9	3.24	0.32	3.23
7,046.0	89.80	177.90	6,365.2	30.0	112.8	-29.9	2.19	0.00	-2.19
7,077.0	90.10	178.50	6,365.2	-1.0	113.8	1.1	2.16	0.97	1.94
7,108.0	91.10	179.20	6,364.9	-32.0	114.4	32.0	3.94	3.23	2.26
7,140.0	91.50	177.70	6,364.2	-64.0	115.3	64.0	4.85	1.25	-4.69
7,171.0	90.60	178.10	6,363.6	-94.9	116.4	95.0	3.18	-2.90	1.29
7,201.0	90.90	178.30	6,363.2	-124.9	117.3	125.0	1.20	1.00	0.67
7,233.0	91.30	178.80	6,362.6	-156.9	118.1	157.0	2.00	1.25	1.56
7,264.0	90.70	178.50	6,362.1	-187.9	118.9	188.0	2.16	-1.94	-0.97
7,295.0	90.70	178.30	6,361.7	-218.9	119.7	218.9	0.65	0.00	-0.65
7,327.0	90.20	179.70	6,361.4	-250.9	120.3	250.9	4.65	-1.56	4.38
7,358.0	90.00	179.00	6,361.4	-281.9	120.7	281.9	2.35	-0.65	-2.26
7,389.0	89.70	180.90	6,361.5	-312.9	120.7	312.9	6.20	-0.97	6.13
7,420.0	89.30	180.60	6,361.7	-343.9	120.3	343.9	1.61	-1.29	-0.97
7,451.0	88.90	179.50	6,362.2	-374.9	120.2	374.9	3.78	-1.29	-3.55
7,482.0	89.90	180.20	6,362.5	-405.9	120.3	405.9	3.94	3.23	2.26
7,517.0	90.70	181.30	6,362.4	-440.9	119.9	440.9	3.89	2.29	3.14
7,548.0	91.40	180.40	6,361.8	-471.8	119.4	471.9	3.68	2.26	-2.90
7,579.0	91.70	179.70	6,361.0	-502.8	119.4	502.9	2.46	0.97	-2.26
7,611.0	91.40	181.80	6,360.1	-534.8	119.0	534.9	6.63	-0.94	6.56
7,642.0	90.90	182.00	6,359.5	-565.8	117.9	565.9	1.74	-1.61	0.65
7,673.0	91.60	183.70	6,358.8	-596.8	116.4	596.8	5.93	2.26	5.48
7,704.0	92.20	183.90	6,357.8	-627.7	114.3	627.7	2.04	1.94	0.65
7,733.0	91.20	182.50	6,356.9	-656.6	112.7	656.7	5.93	-3.45	-4.83
7,765.0	89.50	182.50	6,356.7	-688.6	111.3	688.6	5.31	-5.31	0.00
7,796.0	89.70	183.00	6,356.9	-719.5	109.8	719.6	1.74	0.65	1.61
7,827.0	90.00	183.20	6,357.0	-750.5	108.2	750.5	1.16	0.97	0.65
7,858.0	89.90	181.60	6,357.0	-781.5	106.9	781.5	5.17	-0.32	-5.16
7,890.0	90.00	181.40	6,357.1	-813.5	106.0	813.5	0.70	0.31	-0.63
7,921.0	91.00	183.20	6,356.8	-844.4	104.8	844.5	6.64	3.23	5.81
7,952.0	91.40	182.30	6,356.1	-875.4	103.3	875.4	3.18	1.29	-2.90
7,983.0	91.50	182.70	6,355.4	-906.3	101.9	906.4	1.33	0.32	1.29

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<b>Well:</b>	Antelope 41-44-31HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,015.0	91.10	183.20	6,354.6	-938.3	100.3	938.3	2.00	-1.25	1.56	
8,046.0	91.10	182.50	6,354.0	-969.2	98.8	969.3	2.26	0.00	-2.26	
8,077.0	89.70	183.20	6,353.8	-1,000.2	97.2	1,000.3	5.05	-4.52	2.26	
8,108.0	89.40	182.70	6,354.1	-1,031.2	95.6	1,031.2	1.88	-0.97	-1.61	
8,140.0	89.70	181.80	6,354.3	-1,063.1	94.4	1,063.2	2.96	0.94	-2.81	
8,171.0	90.70	181.10	6,354.2	-1,094.1	93.6	1,094.2	3.94	3.23	-2.26	
8,202.0	92.20	182.30	6,353.4	-1,125.1	92.7	1,125.1	6.20	4.84	3.87	
8,233.0	92.20	180.00	6,352.2	-1,156.1	92.0	1,156.1	7.41	0.00	-7.42	
8,264.0	91.30	181.10	6,351.3	-1,187.1	91.7	1,187.1	4.58	-2.90	3.55	
8,296.0	90.60	180.40	6,350.8	-1,219.0	91.3	1,219.1	3.09	-2.19	-2.19	
8,327.0	90.20	180.00	6,350.5	-1,250.0	91.2	1,250.1	1.82	-1.29	-1.29	
8,358.0	90.50	181.10	6,350.3	-1,281.0	90.9	1,281.1	3.68	0.97	3.55	
8,389.0	90.70	181.10	6,350.0	-1,312.0	90.3	1,312.1	0.65	0.65	0.00	
8,421.0	90.70	180.70	6,349.6	-1,344.0	89.8	1,344.1	1.25	0.00	-1.25	
8,452.0	90.70	181.40	6,349.3	-1,375.0	89.3	1,375.1	2.26	0.00	2.26	
8,484.0	90.70	182.00	6,348.9	-1,407.0	88.3	1,407.0	1.87	0.00	1.88	
8,515.0	90.80	180.40	6,348.5	-1,438.0	87.7	1,438.0	5.17	0.32	-5.16	
8,546.0	90.70	181.40	6,348.1	-1,469.0	87.2	1,469.0	3.24	-0.32	3.23	
8,578.0	90.70	180.40	6,347.7	-1,501.0	86.7	1,501.0	3.12	0.00	-3.13	
8,609.0	89.80	182.10	6,347.5	-1,532.0	86.0	1,532.0	6.20	-2.90	5.48	
8,640.0	89.70	182.00	6,347.7	-1,563.0	84.9	1,563.0	0.46	-0.32	-0.32	
8,671.0	88.60	182.30	6,348.1	-1,593.9	83.7	1,594.0	3.68	-3.55	0.97	
8,703.0	88.50	182.30	6,348.9	-1,625.9	82.4	1,625.9	0.31	-0.31	0.00	
8,734.0	88.40	182.00	6,349.8	-1,656.9	81.3	1,656.9	1.02	-0.32	-0.97	
8,765.0	88.10	181.60	6,350.7	-1,687.8	80.3	1,687.9	1.61	-0.97	-1.29	
8,797.0	88.30	180.70	6,351.7	-1,719.8	79.7	1,719.8	2.88	0.63	-2.81	
8,828.0	88.20	181.10	6,352.7	-1,750.8	79.2	1,750.8	1.33	-0.32	1.29	
8,859.0	88.50	179.90	6,353.6	-1,781.8	78.9	1,781.8	3.99	0.97	-3.87	
8,890.0	88.30	181.10	6,354.4	-1,812.8	78.6	1,812.8	3.92	-0.65	3.87	
8,922.0	88.50	180.20	6,355.3	-1,844.7	78.3	1,844.8	2.88	0.63	-2.81	
8,953.0	88.40	181.30	6,356.2	-1,875.7	77.9	1,875.8	3.56	-0.32	3.55	
8,984.0	89.00	181.30	6,356.9	-1,906.7	77.2	1,906.7	1.94	1.94	0.00	
9,016.0	89.60	181.40	6,357.3	-1,938.7	76.4	1,938.7	1.90	1.88	0.31	
9,047.0	90.30	180.90	6,357.3	-1,969.7	75.8	1,969.7	2.77	2.26	-1.61	
9,078.0	90.40	181.10	6,357.1	-2,000.7	75.2	2,000.7	0.72	0.32	0.65	
9,110.0	90.50	180.20	6,356.8	-2,032.7	74.9	2,032.7	2.83	0.31	-2.81	
9,141.0	90.50	181.10	6,356.6	-2,063.7	74.5	2,063.7	2.90	0.00	2.90	
9,172.0	90.60	180.70	6,356.3	-2,094.7	74.0	2,094.7	1.33	0.32	-1.29	
9,203.0	90.70	182.30	6,355.9	-2,125.7	73.2	2,125.7	5.17	0.32	5.16	
9,234.0	91.30	183.00	6,355.4	-2,156.6	71.8	2,156.7	2.97	1.94	2.26	
9,265.0	91.50	182.00	6,354.6	-2,187.6	70.4	2,187.6	3.29	0.65	-3.23	
9,296.0	91.20	182.30	6,353.9	-2,218.6	69.3	2,218.6	1.37	-0.97	0.97	
9,327.0	91.10	183.70	6,353.3	-2,249.5	67.7	2,249.5	4.53	-0.32	4.52	
9,358.0	90.50	184.60	6,352.8	-2,280.4	65.4	2,280.4	3.49	-1.94	2.90	
9,390.0	89.90	185.10	6,352.7	-2,312.3	62.7	2,312.3	2.44	-1.88	1.56	
9,420.0	90.20	184.60	6,352.7	-2,342.2	60.2	2,342.2	1.94	1.00	-1.67	
9,451.0	89.40	184.60	6,352.8	-2,373.1	57.7	2,373.1	2.58	-2.58	0.00	
9,481.0	89.00	184.60	6,353.2	-2,403.0	55.3	2,403.0	1.33	-1.33	0.00	
9,512.0	89.10	183.50	6,353.7	-2,433.9	53.1	2,433.9	3.56	0.32	-3.55	
9,544.0	89.50	184.60	6,354.1	-2,465.8	50.8	2,465.8	3.66	1.25	3.44	
9,575.0	89.30	183.40	6,354.5	-2,496.8	48.7	2,496.8	3.92	-0.65	-3.87	
9,606.0	89.70	183.70	6,354.7	-2,527.7	46.7	2,527.7	1.61	1.29	0.97	
9,636.0	89.60	182.80	6,354.9	-2,557.6	45.0	2,557.7	3.02	-0.33	-3.00	
9,667.0	89.60	183.50	6,355.1	-2,588.6	43.3	2,588.6	2.26	0.00	2.26	

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Site Antelope 41-31 Pad Sec.31-T5N-R62W
<b>Project:</b>	SEC.31-T5N-R62W	<b>TVD Reference:</b>	WELL @ 4619.0ft (Original Well Elev)
<b>Site:</b>	Antelope 41-31 Pad Sec.31-T5N-R62W	<b>MD Reference:</b>	WELL @ 4619.0ft (Original Well Elev)
<b>Well:</b>	Antelope 41-44-31HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,698.0	89.40	183.50	6,355.4	-2,619.5	41.5	2,619.5	0.65	-0.65	0.00
9,730.0	89.50	183.70	6,355.7	-2,651.5	39.4	2,651.5	0.70	0.31	0.63
9,761.0	90.00	183.50	6,355.8	-2,682.4	37.5	2,682.4	1.74	1.61	-0.65
9,793.0	90.30	182.10	6,355.8	-2,714.4	35.9	2,714.4	4.47	0.94	-4.38
9,823.0	90.40	183.20	6,355.6	-2,744.3	34.5	2,744.3	3.68	0.33	3.67
9,855.0	90.60	182.30	6,355.3	-2,776.3	33.0	2,776.3	2.88	0.63	-2.81
9,885.0	90.90	183.50	6,354.9	-2,806.3	31.5	2,806.3	4.12	1.00	4.00
9,916.0	91.30	184.60	6,354.3	-2,837.2	29.3	2,837.2	3.78	1.29	3.55
9,948.0	90.60	184.80	6,353.8	-2,869.1	26.7	2,869.1	2.28	-2.19	0.63
9,979.0	90.30	184.40	6,353.5	-2,900.0	24.2	2,900.0	1.61	-0.97	-1.29
10,010.0	90.10	184.30	6,353.4	-2,930.9	21.8	2,930.9	0.72	-0.65	-0.32
10,041.0	90.10	184.40	6,353.4	-2,961.8	19.5	2,961.8	0.32	0.00	0.32
10,072.0	89.90	184.30	6,353.4	-2,992.7	17.1	2,992.7	0.72	-0.65	-0.32
10,104.0	89.80	183.90	6,353.4	-3,024.6	14.9	3,024.6	1.29	-0.31	-1.25
10,134.0	89.70	183.00	6,353.6	-3,054.6	13.0	3,054.5	3.02	-0.33	-3.00
10,165.0	90.40	183.20	6,353.6	-3,085.5	11.4	3,085.5	2.35	2.26	0.65
10,197.0	90.70	181.80	6,353.2	-3,117.5	10.0	3,117.5	4.47	0.94	-4.38
10,228.0	91.10	181.80	6,352.8	-3,148.5	9.0	3,148.4	1.29	1.29	0.00
10,259.0	90.80	181.30	6,352.2	-3,179.4	8.2	3,179.4	1.88	-0.97	-1.61
10,291.0	90.00	180.90	6,352.0	-3,211.4	7.5	3,211.4	2.80	-2.50	-1.25
10,323.0	89.80	180.00	6,352.1	-3,243.4	7.3	3,243.4	2.88	-0.63	-2.81
10,353.0	89.60	179.70	6,352.2	-3,273.4	7.4	3,273.4	1.20	-0.67	-1.00
10,384.0	89.80	179.90	6,352.4	-3,304.4	7.5	3,304.4	0.91	0.65	0.65
10,415.0	89.80	179.90	6,352.5	-3,335.4	7.5	3,335.4	0.00	0.00	0.00
10,446.0	90.00	180.60	6,352.6	-3,366.4	7.4	3,366.4	2.35	0.65	2.26
10,477.0	90.10	181.30	6,352.5	-3,397.4	6.9	3,397.4	2.28	0.32	2.26
10,508.0	90.30	180.40	6,352.4	-3,428.4	6.4	3,428.4	2.97	0.65	-2.90
10,539.0	89.80	180.70	6,352.4	-3,459.4	6.1	3,459.4	1.88	-1.61	0.97
10,571.0	90.20	180.70	6,352.4	-3,491.4	5.7	3,491.4	1.25	1.25	0.00
10,602.0	90.40	181.60	6,352.2	-3,522.4	5.1	3,522.4	2.97	0.65	2.90
10,633.0	89.60	181.30	6,352.2	-3,553.4	4.3	3,553.4	2.76	-2.58	-0.97
10,665.0	89.90	182.10	6,352.4	-3,585.4	3.4	3,585.4	2.67	0.94	2.50
10,696.0	89.30	181.80	6,352.6	-3,616.4	2.3	3,616.3	2.16	-1.94	-0.97
10,727.0	89.40	182.00	6,352.9	-3,647.4	1.3	3,647.3	0.72	0.32	0.65
10,757.0	89.80	183.70	6,353.2	-3,677.3	-0.2	3,677.3	5.82	1.33	5.67
10,788.0	89.80	183.90	6,353.3	-3,708.2	-2.2	3,708.2	0.65	0.00	0.65
10,819.0	88.80	181.80	6,353.6	-3,739.2	-3.8	3,739.2	7.50	-3.23	-6.77
10,851.0	89.50	183.40	6,354.1	-3,771.2	-5.2	3,771.1	5.46	2.19	5.00
10,881.0	89.60	183.50	6,354.3	-3,801.1	-7.0	3,801.1	0.47	0.33	0.33
10,913.0	89.60	183.90	6,354.6	-3,833.0	-9.1	3,833.0	1.25	0.00	1.25
10,944.0	90.00	183.90	6,354.7	-3,864.0	-11.2	3,863.9	1.29	1.29	0.00
10,975.0	89.70	183.00	6,354.8	-3,894.9	-13.1	3,894.9	3.06	-0.97	-2.90
10,998.0	89.30	182.10	6,355.0	-3,917.9	-14.1	3,917.9	4.28	-1.74	-3.91
11,050.0	89.30	182.10	6,355.6	-3,969.9	-16.0	3,969.8	0.00	0.00	0.00
BHL 460°FSL & 500°FEL									

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_