

BONANZA CREEK ENERGY OPERATING

Well Name: **Antelope K-O-17HNB**

Surface Location: Antelope P-17 Pad Sec.17-T5N-R62W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

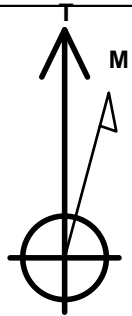
Ground Elevation: 4695.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1392634.27	3322279.60	40.405410	-104.342720	

RKB - 13' WELL @ 4708.0ft (RKB - 13')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 470'FSL & 2450'FEL	6393.0	-4302.5	-1122.7	Point
LANDING PT. 531'FNL, 2450'FEL	6393.0	-83.8	-1044.4	Point



Azimuths to True North
Magnetic North: 8.39°

Magnetic Field
Strength: 52989.4nT
Dip Angle: 67.06°
Date: 4/4/2013
Model: IGRF2010

Antelope P-17 Pad Sec.17-T5N-R62W
Antelope K-O-17HNB
Plan #4 (4-04-13)

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
5872.2	5995.1	KOP #2
6393.0	6813.3	End of Build

South(-)/North(+) (1500 ft/in)

SHL 480'FNL & 1409'FEL KOP #2

LANDING PT. 531'FNL, 2450'FEL

End of Build

Antelope 31-17 (Exist.)

Antelope L-17 (Exist.)

Antelope 32-17 (Exist.)

Antelope M-17 (Exist.)

Antelope 33-17 (Exist.)

Antelope N-17 (Exist.)

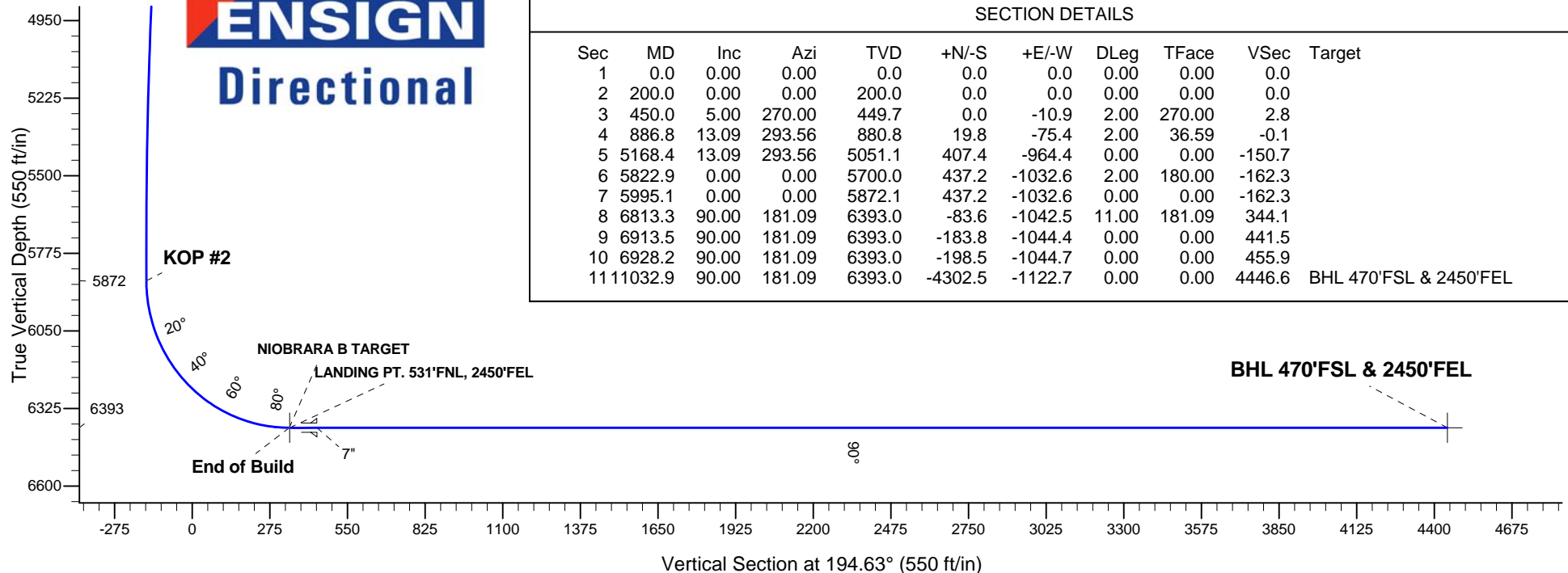
Antelope K-O-17HNB

Antelope 34-17 (Exist.)

Antelope P-T-17HZ (Exist.)

BHL 470'FSL & 2450'FEL

West(-)/East(+) (1500 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	450.0	5.00	270.00	449.7	0.0	-10.9	2.00	270.00	2.8	
4	886.8	13.09	293.56	880.8	19.8	-75.4	2.00	36.59	-0.1	
5	5168.4	13.09	293.56	5051.1	407.4	-964.4	0.00	0.00	-150.7	
6	5822.9	0.00	0.00	5700.0	437.2	-1032.6	2.00	180.00	-162.3	
7	5995.1	0.00	0.00	5872.1	437.2	-1032.6	0.00	0.00	-162.3	
8	6813.3	90.00	181.09	6393.0	-83.6	-1042.5	11.00	181.09	344.1	
9	6913.5	90.00	181.09	6393.0	-183.8	-1044.4	0.00	0.00	441.5	
10	6928.2	90.00	181.09	6393.0	-198.5	-1044.7	0.00	0.00	455.9	
11	11032.9	90.00	181.09	6393.0	-4302.5	-1122.7	0.00	0.00	4446.6	BHL 470'FSL & 2450'FEL



Directional

BONANZA CREEK ENERGY OPERATING

SEC.17-T5N-R62W

Antelope P-17 Pad Sec.17-T5N-R62W

Antelope K-O-17HNB

Wellbore #1

Plan: Plan #4 (4-04-13)

Standard Planning Report

05 April, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Project:	SEC.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site:	Antelope P-17 Pad Sec.17-T5N-R62W	North Reference:	True
Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (4-04-13)		

Project	SEC.17-T5N-R62W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Antelope P-17 Pad Sec.17-T5N-R62W											
Site Position:						Northing:			1,392,656.13 ft			Latitude:			40.405470		
From:			Lat/Long			Easting:			3,322,279.31 ft			Longitude:			-104.342720		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.75 °		

Well	Antelope K-O-17HNB					
Well Position	+N-S	-21.9 ft	Northing:	1,392,634.27 ft	Latitude:	40.405410
	+E-W	0.0 ft	Easting:	3,322,279.60 ft	Longitude:	-104.342720
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,695.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/4/2013	8.39	67.06	52,989

Design	Plan #4 (4-04-13)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	194.63

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
450.0	5.00	270.00	449.7	0.0	-10.9	2.00	2.00	0.00	270.00	
886.8	13.09	293.56	880.8	19.8	-75.4	2.00	1.85	5.39	36.59	
5,168.4	13.09	293.56	5,051.1	407.4	-964.4	0.00	0.00	0.00	0.00	
5,822.9	0.00	0.00	5,700.0	437.2	-1,032.6	2.00	-2.00	0.00	180.00	
5,995.1	0.00	0.00	5,872.1	437.2	-1,032.6	0.00	0.00	0.00	0.00	
6,813.3	90.00	181.09	6,393.0	-83.6	-1,042.5	11.00	11.00	0.00	181.09	
6,913.5	90.00	181.09	6,393.0	-183.8	-1,044.4	0.00	0.00	0.00	0.00	
6,928.2	90.00	181.09	6,393.0	-198.5	-1,044.7	0.00	0.00	0.00	0.00	
11,032.9	90.00	181.09	6,393.0	-4,302.5	-1,122.7	0.00	0.00	0.00	0.00	BHL 470'FSL & 245

Database:	Landmark	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Project:	SEC.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site:	Antelope P-17 Pad Sec.17-T5N-R62W	North Reference:	True
Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (4-04-13)		

Planned 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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
240.0	0.80	270.00	240.0	0.0	-0.3	0.1	2.00	2.00	0.00
280.0	1.60	270.00	280.0	0.0	-1.1	0.3	2.00	2.00	0.00
320.0	2.40	270.00	320.0	0.0	-2.5	0.6	2.00	2.00	0.00
360.0	3.20	270.00	359.9	0.0	-4.5	1.1	2.00	2.00	0.00
400.0	4.00	270.00	399.8	0.0	-7.0	1.8	2.00	2.00	0.00
440.0	4.80	270.00	439.7	0.0	-10.0	2.5	2.00	2.00	0.00
450.0	5.00	270.00	449.7	0.0	-10.9	2.8	2.00	2.00	0.00
480.0	5.49	273.74	479.6	0.1	-13.6	3.4	2.00	1.64	12.46
520.0	6.18	277.77	519.3	0.5	-17.7	4.0	2.00	1.72	10.09
560.0	6.89	280.99	559.1	1.3	-22.2	4.4	2.00	1.78	8.05
600.0	7.62	283.61	598.8	2.3	-27.1	4.6	2.00	1.82	6.53
640.0	8.36	285.76	638.4	3.8	-32.5	4.6	2.00	1.85	5.39
680.0	9.11	287.57	677.9	5.5	-38.3	4.3	2.00	1.88	4.51
720.0	9.87	289.10	717.4	7.6	-44.6	3.9	2.00	1.90	3.83
760.0	10.64	290.41	756.7	10.0	-51.3	3.3	2.00	1.91	3.28
800.0	11.41	291.55	796.0	12.7	-58.4	2.4	2.00	1.92	2.85
840.0	12.18	292.54	835.1	15.8	-66.0	1.4	2.00	1.93	2.49
880.0	12.96	293.42	874.2	19.2	-74.0	0.1	2.00	1.94	2.20
886.8	13.09	293.56	880.8	19.8	-75.4	-0.1	2.00	1.95	2.05
920.0	13.09	293.56	913.1	22.8	-82.3	-1.3	0.00	0.00	0.00
960.0	13.09	293.56	952.1	26.4	-90.6	-2.7	0.00	0.00	0.00
1,000.0	13.09	293.56	991.1	30.1	-98.9	-4.1	0.00	0.00	0.00
1,040.0	13.09	293.56	1,030.0	33.7	-107.2	-5.5	0.00	0.00	0.00
1,080.0	13.09	293.56	1,069.0	37.3	-115.5	-6.9	0.00	0.00	0.00
1,120.0	13.09	293.56	1,108.0	40.9	-123.8	-8.3	0.00	0.00	0.00
1,160.0	13.09	293.56	1,146.9	44.5	-132.1	-9.7	0.00	0.00	0.00
1,200.0	13.09	293.56	1,185.9	48.2	-140.4	-11.1	0.00	0.00	0.00
1,240.0	13.09	293.56	1,224.8	51.8	-148.7	-12.6	0.00	0.00	0.00
1,280.0	13.09	293.56	1,263.8	55.4	-157.0	-14.0	0.00	0.00	0.00
1,320.0	13.09	293.56	1,302.8	59.0	-165.3	-15.4	0.00	0.00	0.00
1,360.0	13.09	293.56	1,341.7	62.7	-173.7	-16.8	0.00	0.00	0.00
1,400.0	13.09	293.56	1,380.7	66.3	-182.0	-18.2	0.00	0.00	0.00
1,440.0	13.09	293.56	1,419.6	69.9	-190.3	-19.6	0.00	0.00	0.00
1,480.0	13.09	293.56	1,458.6	73.5	-198.6	-21.0	0.00	0.00	0.00
1,520.0	13.09	293.56	1,497.6	77.1	-206.9	-22.4	0.00	0.00	0.00
1,560.0	13.09	293.56	1,536.5	80.8	-215.2	-23.8	0.00	0.00	0.00
1,600.0	13.09	293.56	1,575.5	84.4	-223.5	-25.2	0.00	0.00	0.00
1,640.0	13.09	293.56	1,614.4	88.0	-231.8	-26.6	0.00	0.00	0.00
1,680.0	13.09	293.56	1,653.4	91.6	-240.1	-28.0	0.00	0.00	0.00
1,720.0	13.09	293.56	1,692.4	95.2	-248.4	-29.4	0.00	0.00	0.00
1,760.0	13.09	293.56	1,731.3	98.9	-256.7	-30.8	0.00	0.00	0.00
1,800.0	13.09	293.56	1,770.3	102.5	-265.0	-32.3	0.00	0.00	0.00
1,840.0	13.09	293.56	1,809.2	106.1	-273.3	-33.7	0.00	0.00	0.00
1,880.0	13.09	293.56	1,848.2	109.7	-281.6	-35.1	0.00	0.00	0.00
1,920.0	13.09	293.56	1,887.2	113.4	-289.9	-36.5	0.00	0.00	0.00
1,960.0	13.09	293.56	1,926.1	117.0	-298.2	-37.9	0.00	0.00	0.00
2,000.0	13.09	293.56	1,965.1	120.6	-306.5	-39.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Project:	SEC.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site:	Antelope P-17 Pad Sec.17-T5N-R62W	North Reference:	True
Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (4-04-13)		

Planned 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)
2,040.0	13.09	293.56	2,004.0	124.2	-314.8	-40.7	0.00	0.00	0.00
2,080.0	13.09	293.56	2,043.0	127.8	-323.1	-42.1	0.00	0.00	0.00
2,120.0	13.09	293.56	2,082.0	131.5	-331.4	-43.5	0.00	0.00	0.00
2,160.0	13.09	293.56	2,120.9	135.1	-339.7	-44.9	0.00	0.00	0.00
2,200.0	13.09	293.56	2,159.9	138.7	-348.1	-46.3	0.00	0.00	0.00
2,240.0	13.09	293.56	2,198.8	142.3	-356.4	-47.7	0.00	0.00	0.00
2,280.0	13.09	293.56	2,237.8	145.9	-364.7	-49.1	0.00	0.00	0.00
2,320.0	13.09	293.56	2,276.8	149.6	-373.0	-50.5	0.00	0.00	0.00
2,360.0	13.09	293.56	2,315.7	153.2	-381.3	-52.0	0.00	0.00	0.00
2,400.0	13.09	293.56	2,354.7	156.8	-389.6	-53.4	0.00	0.00	0.00
2,440.0	13.09	293.56	2,393.6	160.4	-397.9	-54.8	0.00	0.00	0.00
2,480.0	13.09	293.56	2,432.6	164.1	-406.2	-56.2	0.00	0.00	0.00
2,520.0	13.09	293.56	2,471.6	167.7	-414.5	-57.6	0.00	0.00	0.00
2,560.0	13.09	293.56	2,510.5	171.3	-422.8	-59.0	0.00	0.00	0.00
2,600.0	13.09	293.56	2,549.5	174.9	-431.1	-60.4	0.00	0.00	0.00
2,640.0	13.09	293.56	2,588.4	178.5	-439.4	-61.8	0.00	0.00	0.00
2,680.0	13.09	293.56	2,627.4	182.2	-447.7	-63.2	0.00	0.00	0.00
2,720.0	13.09	293.56	2,666.4	185.8	-456.0	-64.6	0.00	0.00	0.00
2,760.0	13.09	293.56	2,705.3	189.4	-464.3	-66.0	0.00	0.00	0.00
2,800.0	13.09	293.56	2,744.3	193.0	-472.6	-67.4	0.00	0.00	0.00
2,840.0	13.09	293.56	2,783.2	196.6	-480.9	-68.8	0.00	0.00	0.00
2,880.0	13.09	293.56	2,822.2	200.3	-489.2	-70.2	0.00	0.00	0.00
2,920.0	13.09	293.56	2,861.2	203.9	-497.5	-71.7	0.00	0.00	0.00
2,960.0	13.09	293.56	2,900.1	207.5	-505.8	-73.1	0.00	0.00	0.00
3,000.0	13.09	293.56	2,939.1	211.1	-514.2	-74.5	0.00	0.00	0.00
3,040.0	13.09	293.56	2,978.1	214.7	-522.5	-75.9	0.00	0.00	0.00
3,080.0	13.09	293.56	3,017.0	218.4	-530.8	-77.3	0.00	0.00	0.00
3,120.0	13.09	293.56	3,056.0	222.0	-539.1	-78.7	0.00	0.00	0.00
3,160.0	13.09	293.56	3,094.9	225.6	-547.4	-80.1	0.00	0.00	0.00
3,200.0	13.09	293.56	3,133.9	229.2	-555.7	-81.5	0.00	0.00	0.00
3,240.0	13.09	293.56	3,172.9	232.9	-564.0	-82.9	0.00	0.00	0.00
3,280.0	13.09	293.56	3,211.8	236.5	-572.3	-84.3	0.00	0.00	0.00
3,320.0	13.09	293.56	3,250.8	240.1	-580.6	-85.7	0.00	0.00	0.00
3,360.0	13.09	293.56	3,289.7	243.7	-588.9	-87.1	0.00	0.00	0.00
3,400.0	13.09	293.56	3,328.7	247.3	-597.2	-88.5	0.00	0.00	0.00
3,440.0	13.09	293.56	3,367.7	251.0	-605.5	-89.9	0.00	0.00	0.00
3,480.0	13.09	293.56	3,406.6	254.6	-613.8	-91.4	0.00	0.00	0.00
3,520.0	13.09	293.56	3,445.6	258.2	-622.1	-92.8	0.00	0.00	0.00
3,560.0	13.09	293.56	3,484.5	261.8	-630.4	-94.2	0.00	0.00	0.00
3,600.0	13.09	293.56	3,523.5	265.4	-638.7	-95.6	0.00	0.00	0.00
3,640.0	13.09	293.56	3,562.5	269.1	-647.0	-97.0	0.00	0.00	0.00
3,680.0	13.09	293.56	3,601.4	272.7	-655.3	-98.4	0.00	0.00	0.00
3,720.0	13.09	293.56	3,640.4	276.3	-663.6	-99.8	0.00	0.00	0.00
3,760.0	13.09	293.56	3,679.3	279.9	-671.9	-101.2	0.00	0.00	0.00
3,800.0	13.09	293.56	3,718.3	283.6	-680.2	-102.6	0.00	0.00	0.00
3,840.0	13.09	293.56	3,757.3	287.2	-688.6	-104.0	0.00	0.00	0.00
3,880.0	13.09	293.56	3,796.2	290.8	-696.9	-105.4	0.00	0.00	0.00
3,920.0	13.09	293.56	3,835.2	294.4	-705.2	-106.8	0.00	0.00	0.00
3,960.0	13.09	293.56	3,874.1	298.0	-713.5	-108.2	0.00	0.00	0.00
4,000.0	13.09	293.56	3,913.1	301.7	-721.8	-109.6	0.00	0.00	0.00
4,040.0	13.09	293.56	3,952.1	305.3	-730.1	-111.1	0.00	0.00	0.00
4,080.0	13.09	293.56	3,991.0	308.9	-738.4	-112.5	0.00	0.00	0.00
4,120.0	13.09	293.56	4,030.0	312.5	-746.7	-113.9	0.00	0.00	0.00
4,160.0	13.09	293.56	4,068.9	316.1	-755.0	-115.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Project:	SEC.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site:	Antelope P-17 Pad Sec.17-T5N-R62W	North Reference:	True
Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (4-04-13)		

Planned 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)
4,200.0	13.09	293.56	4,107.9	319.8	-763.3	-116.7	0.00	0.00	0.00
4,240.0	13.09	293.56	4,146.9	323.4	-771.6	-118.1	0.00	0.00	0.00
4,280.0	13.09	293.56	4,185.8	327.0	-779.9	-119.5	0.00	0.00	0.00
4,320.0	13.09	293.56	4,224.8	330.6	-788.2	-120.9	0.00	0.00	0.00
4,360.0	13.09	293.56	4,263.7	334.3	-796.5	-122.3	0.00	0.00	0.00
4,400.0	13.09	293.56	4,302.7	337.9	-804.8	-123.7	0.00	0.00	0.00
4,440.0	13.09	293.56	4,341.7	341.5	-813.1	-125.1	0.00	0.00	0.00
4,480.0	13.09	293.56	4,380.6	345.1	-821.4	-126.5	0.00	0.00	0.00
4,520.0	13.09	293.56	4,419.6	348.7	-829.7	-127.9	0.00	0.00	0.00
4,560.0	13.09	293.56	4,458.5	352.4	-838.0	-129.3	0.00	0.00	0.00
4,600.0	13.09	293.56	4,497.5	356.0	-846.3	-130.8	0.00	0.00	0.00
4,640.0	13.09	293.56	4,536.5	359.6	-854.6	-132.2	0.00	0.00	0.00
4,680.0	13.09	293.56	4,575.4	363.2	-863.0	-133.6	0.00	0.00	0.00
4,720.0	13.09	293.56	4,614.4	366.8	-871.3	-135.0	0.00	0.00	0.00
4,760.0	13.09	293.56	4,653.3	370.5	-879.6	-136.4	0.00	0.00	0.00
4,800.0	13.09	293.56	4,692.3	374.1	-887.9	-137.8	0.00	0.00	0.00
4,840.0	13.09	293.56	4,731.3	377.7	-896.2	-139.2	0.00	0.00	0.00
4,880.0	13.09	293.56	4,770.2	381.3	-904.5	-140.6	0.00	0.00	0.00
4,920.0	13.09	293.56	4,809.2	385.0	-912.8	-142.0	0.00	0.00	0.00
4,960.0	13.09	293.56	4,848.2	388.6	-921.1	-143.4	0.00	0.00	0.00
5,000.0	13.09	293.56	4,887.1	392.2	-929.4	-144.8	0.00	0.00	0.00
5,040.0	13.09	293.56	4,926.1	395.8	-937.7	-146.2	0.00	0.00	0.00
5,080.0	13.09	293.56	4,965.0	399.4	-946.0	-147.6	0.00	0.00	0.00
5,120.0	13.09	293.56	5,004.0	403.1	-954.3	-149.0	0.00	0.00	0.00
5,160.0	13.09	293.56	5,043.0	406.7	-962.6	-150.5	0.00	0.00	0.00
5,168.4	13.09	293.56	5,051.1	407.4	-964.4	-150.7	0.00	0.00	0.00
5,200.0	12.46	293.56	5,082.0	410.2	-970.8	-151.8	2.00	-2.00	0.00
5,240.0	11.66	293.56	5,121.1	413.6	-978.4	-153.1	2.00	-2.00	0.00
5,280.0	10.86	293.56	5,160.3	416.7	-985.6	-154.3	2.00	-2.00	0.00
5,320.0	10.06	293.56	5,199.6	419.6	-992.2	-155.5	2.00	-2.00	0.00
5,360.0	9.26	293.56	5,239.1	422.3	-998.4	-156.5	2.00	-2.00	0.00
5,400.0	8.46	293.56	5,278.6	424.7	-1,004.0	-157.5	2.00	-2.00	0.00
5,440.0	7.66	293.56	5,318.2	427.0	-1,009.2	-158.3	2.00	-2.00	0.00
5,480.0	6.86	293.56	5,357.9	429.0	-1,013.8	-159.1	2.00	-2.00	0.00
5,520.0	6.06	293.56	5,397.6	430.8	-1,017.9	-159.8	2.00	-2.00	0.00
5,560.0	5.26	293.56	5,437.4	432.4	-1,021.5	-160.4	2.00	-2.00	0.00
5,600.0	4.46	293.56	5,477.3	433.7	-1,024.7	-161.0	2.00	-2.00	0.00
5,640.0	3.66	293.56	5,517.2	434.9	-1,027.2	-161.4	2.00	-2.00	0.00
5,680.0	2.86	293.56	5,557.1	435.8	-1,029.3	-161.8	2.00	-2.00	0.00
5,720.0	2.06	293.56	5,597.1	436.5	-1,030.9	-162.0	2.00	-2.00	0.00
5,760.0	1.26	293.56	5,637.1	436.9	-1,032.0	-162.2	2.00	-2.00	0.00
5,800.0	0.46	293.56	5,677.1	437.2	-1,032.5	-162.3	2.00	-2.00	0.00
5,822.9	0.00	0.00	5,700.0	437.2	-1,032.6	-162.3	2.00	-2.00	0.00
5,840.0	0.00	0.00	5,717.1	437.2	-1,032.6	-162.3	0.00	0.00	0.00
5,880.0	0.00	0.00	5,757.1	437.2	-1,032.6	-162.3	0.00	0.00	0.00
5,920.0	0.00	0.00	5,797.1	437.2	-1,032.6	-162.3	0.00	0.00	0.00
5,960.0	0.00	0.00	5,837.1	437.2	-1,032.6	-162.3	0.00	0.00	0.00
5,995.1	0.00	0.00	5,872.2	437.2	-1,032.6	-162.3	0.00	0.00	0.00
KOP #2									
6,000.0	0.54	181.09	5,877.1	437.2	-1,032.6	-162.3	11.06	11.06	0.00
6,040.0	4.94	181.09	5,917.0	435.3	-1,032.6	-160.4	11.00	11.00	0.00
6,080.0	9.34	181.09	5,956.7	430.3	-1,032.7	-155.6	11.00	11.00	0.00
6,120.0	13.74	181.09	5,995.9	422.3	-1,032.9	-147.8	11.00	11.00	0.00
6,160.0	18.14	181.09	6,034.3	411.3	-1,033.1	-137.1	11.00	11.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Project:	SEC.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site:	Antelope P-17 Pad Sec.17-T5N-R62W	North Reference:	True
Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (4-04-13)		

Planned 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)
6,200.0	22.54	181.09	6,071.8	397.4	-1,033.4	-123.6	11.00	11.00	0.00
6,240.0	26.94	181.09	6,108.1	380.7	-1,033.7	-107.3	11.00	11.00	0.00
6,280.0	31.34	181.09	6,143.1	361.2	-1,034.0	-88.4	11.00	11.00	0.00
6,320.0	35.74	181.09	6,176.4	339.1	-1,034.5	-66.9	11.00	11.00	0.00
6,360.0	40.14	181.09	6,207.9	314.5	-1,034.9	-43.0	11.00	11.00	0.00
6,400.0	44.54	181.09	6,237.5	287.6	-1,035.4	-16.8	11.00	11.00	0.00
6,440.0	48.94	181.09	6,264.9	258.5	-1,036.0	11.5	11.00	11.00	0.00
6,480.0	53.34	181.09	6,290.0	227.3	-1,036.6	41.8	11.00	11.00	0.00
6,520.0	57.74	181.09	6,312.6	194.4	-1,037.2	73.8	11.00	11.00	0.00
6,560.0	62.14	181.09	6,332.6	159.8	-1,037.9	107.5	11.00	11.00	0.00
6,600.0	66.54	181.09	6,350.0	123.7	-1,038.6	142.5	11.00	11.00	0.00
6,640.0	70.94	181.09	6,364.4	86.5	-1,039.3	178.7	11.00	11.00	0.00
6,680.0	75.34	181.09	6,376.0	48.2	-1,040.0	215.9	11.00	11.00	0.00
6,720.0	79.74	181.09	6,384.7	9.2	-1,040.7	253.9	11.00	11.00	0.00
6,760.0	84.14	181.09	6,390.3	-30.4	-1,041.5	292.4	11.00	11.00	0.00
6,800.0	88.54	181.09	6,392.8	-70.3	-1,042.2	331.2	11.00	11.00	0.00
6,813.2	89.99	181.09	6,393.0	-83.5	-1,042.5	344.0	11.00	11.00	0.00
NIORARA B TARGET									
6,813.3	90.00	181.09	6,393.0	-83.6	-1,042.5	344.1	7.25	7.25	0.00
End of Build									
6,840.0	90.00	181.09	6,393.0	-110.3	-1,043.0	370.1	0.00	0.00	0.00
6,880.0	90.00	181.09	6,393.0	-150.3	-1,043.8	409.0	0.00	0.00	0.00
6,913.5	90.00	181.09	6,393.0	-183.8	-1,044.4	441.6	0.00	0.00	0.00
7"									
6,920.0	90.00	181.09	6,393.0	-190.3	-1,044.5	447.9	0.00	0.00	0.00
6,928.2	90.00	181.09	6,393.0	-198.5	-1,044.7	455.9	0.00	0.00	0.00
6,960.0	90.00	181.09	6,393.0	-230.3	-1,045.3	486.8	0.00	0.00	0.00
7,000.0	90.00	181.09	6,393.0	-270.3	-1,046.0	525.6	0.00	0.00	0.00
7,040.0	90.00	181.09	6,393.0	-310.3	-1,046.8	564.5	0.00	0.00	0.00
7,080.0	90.00	181.09	6,393.0	-350.3	-1,047.6	603.4	0.00	0.00	0.00
7,120.0	90.00	181.09	6,393.0	-390.3	-1,048.3	642.3	0.00	0.00	0.00
7,160.0	90.00	181.09	6,393.0	-430.3	-1,049.1	681.2	0.00	0.00	0.00
7,200.0	90.00	181.09	6,393.0	-470.3	-1,049.8	720.1	0.00	0.00	0.00
7,240.0	90.00	181.09	6,393.0	-510.2	-1,050.6	759.0	0.00	0.00	0.00
7,280.0	90.00	181.09	6,393.0	-550.2	-1,051.4	797.9	0.00	0.00	0.00
7,320.0	90.00	181.09	6,393.0	-590.2	-1,052.1	836.8	0.00	0.00	0.00
7,360.0	90.00	181.09	6,393.0	-630.2	-1,052.9	875.6	0.00	0.00	0.00
7,400.0	90.00	181.09	6,393.0	-670.2	-1,053.6	914.5	0.00	0.00	0.00
7,440.0	90.00	181.09	6,393.0	-710.2	-1,054.4	953.4	0.00	0.00	0.00
7,480.0	90.00	181.09	6,393.0	-750.2	-1,055.2	992.3	0.00	0.00	0.00
7,520.0	90.00	181.09	6,393.0	-790.2	-1,055.9	1,031.2	0.00	0.00	0.00
7,560.0	90.00	181.09	6,393.0	-830.2	-1,056.7	1,070.1	0.00	0.00	0.00
7,600.0	90.00	181.09	6,393.0	-870.2	-1,057.4	1,109.0	0.00	0.00	0.00
7,640.0	90.00	181.09	6,393.0	-910.2	-1,058.2	1,147.9	0.00	0.00	0.00
7,680.0	90.00	181.09	6,393.0	-950.2	-1,059.0	1,186.8	0.00	0.00	0.00
7,720.0	90.00	181.09	6,393.0	-990.2	-1,059.7	1,225.6	0.00	0.00	0.00
7,760.0	90.00	181.09	6,393.0	-1,030.2	-1,060.5	1,264.5	0.00	0.00	0.00
7,800.0	90.00	181.09	6,393.0	-1,070.1	-1,061.2	1,303.4	0.00	0.00	0.00
7,840.0	90.00	181.09	6,393.0	-1,110.1	-1,062.0	1,342.3	0.00	0.00	0.00
7,880.0	90.00	181.09	6,393.0	-1,150.1	-1,062.8	1,381.2	0.00	0.00	0.00
7,920.0	90.00	181.09	6,393.0	-1,190.1	-1,063.5	1,420.1	0.00	0.00	0.00
7,960.0	90.00	181.09	6,393.0	-1,230.1	-1,064.3	1,459.0	0.00	0.00	0.00
8,000.0	90.00	181.09	6,393.0	-1,270.1	-1,065.0	1,497.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Project:	SEC.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site:	Antelope P-17 Pad Sec.17-T5N-R62W	North Reference:	True
Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 (4-04-13)		

Planned 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)
8,040.0	90.00	181.09	6,393.0	-1,310.1	-1,065.8	1,536.8	0.00	0.00	0.00
8,080.0	90.00	181.09	6,393.0	-1,350.1	-1,066.6	1,575.6	0.00	0.00	0.00
8,120.0	90.00	181.09	6,393.0	-1,390.1	-1,067.3	1,614.5	0.00	0.00	0.00
8,160.0	90.00	181.09	6,393.0	-1,430.1	-1,068.1	1,653.4	0.00	0.00	0.00
8,200.0	90.00	181.09	6,393.0	-1,470.1	-1,068.8	1,692.3	0.00	0.00	0.00
8,240.0	90.00	181.09	6,393.0	-1,510.1	-1,069.6	1,731.2	0.00	0.00	0.00
8,280.0	90.00	181.09	6,393.0	-1,550.1	-1,070.4	1,770.1	0.00	0.00	0.00
8,320.0	90.00	181.09	6,393.0	-1,590.1	-1,071.1	1,809.0	0.00	0.00	0.00
8,360.0	90.00	181.09	6,393.0	-1,630.0	-1,071.9	1,847.9	0.00	0.00	0.00
8,400.0	90.00	181.09	6,393.0	-1,670.0	-1,072.6	1,886.8	0.00	0.00	0.00
8,440.0	90.00	181.09	6,393.0	-1,710.0	-1,073.4	1,925.6	0.00	0.00	0.00
8,480.0	90.00	181.09	6,393.0	-1,750.0	-1,074.2	1,964.5	0.00	0.00	0.00
8,520.0	90.00	181.09	6,393.0	-1,790.0	-1,074.9	2,003.4	0.00	0.00	0.00
8,560.0	90.00	181.09	6,393.0	-1,830.0	-1,075.7	2,042.3	0.00	0.00	0.00
8,600.0	90.00	181.09	6,393.0	-1,870.0	-1,076.4	2,081.2	0.00	0.00	0.00
8,640.0	90.00	181.09	6,393.0	-1,910.0	-1,077.2	2,120.1	0.00	0.00	0.00
8,680.0	90.00	181.09	6,393.0	-1,950.0	-1,078.0	2,159.0	0.00	0.00	0.00
8,720.0	90.00	181.09	6,393.0	-1,990.0	-1,078.7	2,197.9	0.00	0.00	0.00
8,760.0	90.00	181.09	6,393.0	-2,030.0	-1,079.5	2,236.8	0.00	0.00	0.00
8,800.0	90.00	181.09	6,393.0	-2,070.0	-1,080.2	2,275.6	0.00	0.00	0.00
8,840.0	90.00	181.09	6,393.0	-2,110.0	-1,081.0	2,314.5	0.00	0.00	0.00
8,880.0	90.00	181.09	6,393.0	-2,149.9	-1,081.8	2,353.4	0.00	0.00	0.00
8,920.0	90.00	181.09	6,393.0	-2,189.9	-1,082.5	2,392.3	0.00	0.00	0.00
8,960.0	90.00	181.09	6,393.0	-2,229.9	-1,083.3	2,431.2	0.00	0.00	0.00
9,000.0	90.00	181.09	6,393.0	-2,269.9	-1,084.0	2,470.1	0.00	0.00	0.00
9,040.0	90.00	181.09	6,393.0	-2,309.9	-1,084.8	2,509.0	0.00	0.00	0.00
9,080.0	90.00	181.09	6,393.0	-2,349.9	-1,085.6	2,547.9	0.00	0.00	0.00
9,120.0	90.00	181.09	6,393.0	-2,389.9	-1,086.3	2,586.8	0.00	0.00	0.00
9,160.0	90.00	181.09	6,393.0	-2,429.9	-1,087.1	2,625.6	0.00	0.00	0.00
9,200.0	90.00	181.09	6,393.0	-2,469.9	-1,087.8	2,664.5	0.00	0.00	0.00
9,240.0	90.00	181.09	6,393.0	-2,509.9	-1,088.6	2,703.4	0.00	0.00	0.00
9,280.0	90.00	181.09	6,393.0	-2,549.9	-1,089.4	2,742.3	0.00	0.00	0.00
9,320.0	90.00	181.09	6,393.0	-2,589.9	-1,090.1	2,781.2	0.00	0.00	0.00
9,360.0	90.00	181.09	6,393.0	-2,629.9	-1,090.9	2,820.1	0.00	0.00	0.00
9,400.0	90.00	181.09	6,393.0	-2,669.9	-1,091.6	2,859.0	0.00	0.00	0.00
9,440.0	90.00	181.09	6,393.0	-2,709.8	-1,092.4	2,897.9	0.00	0.00	0.00
9,480.0	90.00	181.09	6,393.0	-2,749.8	-1,093.2	2,936.8	0.00	0.00	0.00
9,520.0	90.00	181.09	6,393.0	-2,789.8	-1,093.9	2,975.6	0.00	0.00	0.00
9,560.0	90.00	181.09	6,393.0	-2,829.8	-1,094.7	3,014.5	0.00	0.00	0.00
9,600.0	90.00	181.09	6,393.0	-2,869.8	-1,095.4	3,053.4	0.00	0.00	0.00
9,640.0	90.00	181.09	6,393.0	-2,909.8	-1,096.2	3,092.3	0.00	0.00	0.00
9,680.0	90.00	181.09	6,393.0	-2,949.8	-1,097.0	3,131.2	0.00	0.00	0.00
9,720.0	90.00	181.09	6,393.0	-2,989.8	-1,097.7	3,170.1	0.00	0.00	0.00
9,760.0	90.00	181.09	6,393.0	-3,029.8	-1,098.5	3,209.0	0.00	0.00	0.00
9,800.0	90.00	181.09	6,393.0	-3,069.8	-1,099.2	3,247.9	0.00	0.00	0.00
9,840.0	90.00	181.09	6,393.0	-3,109.8	-1,100.0	3,286.8	0.00	0.00	0.00
9,880.0	90.00	181.09	6,393.0	-3,149.8	-1,100.8	3,325.6	0.00	0.00	0.00
9,920.0	90.00	181.09	6,393.0	-3,189.8	-1,101.5	3,364.5	0.00	0.00	0.00
9,960.0	90.00	181.09	6,393.0	-3,229.8	-1,102.3	3,403.4	0.00	0.00	0.00
10,000.0	90.00	181.09	6,393.0	-3,269.7	-1,103.0	3,442.3	0.00	0.00	0.00
10,040.0	90.00	181.09	6,393.0	-3,309.7	-1,103.8	3,481.2	0.00	0.00	0.00
10,080.0	90.00	181.09	6,393.0	-3,349.7	-1,104.6	3,520.1	0.00	0.00	0.00
10,120.0	90.00	181.09	6,393.0	-3,389.7	-1,105.3	3,559.0	0.00	0.00	0.00
10,160.0	90.00	181.09	6,393.0	-3,429.7	-1,106.1	3,597.9	0.00	0.00	0.00

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S	+E/-W	
			(ft)	(ft)	
	200.0	200.0	0.0	0.0	KOP #1
	5,995.1	5,872.2	437.2	-1,032.6	KOP #2
	6,813.3	6,393.0	-83.6	-1,042.5	End of Build



Directional

BONANZA CREEK ENERGY OPERATING

SEC.17-T5N-R62W

Antelope P-17 Pad Sec.17-T5N-R62W

Antelope K-O-17HNB

Wellbore #1

Plan #4 (4-04-13)

Anticollision Report

05 April, 2013

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Project:	SEC.17-T5N-R62W	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Reference Site:	Antelope P-17 Pad Sec.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #4 (4-04-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #4 (4-04-13)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 4/5/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,032.9	Plan #4 (4-04-13) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Antelope 21-17 Pad Sec.17-T5N-R62W						
Antelope L-17 (Exist.) - Wellbore #1 - Wellbore #1	7,589.1	6,474.7	198.3	155.9	4.680	CC, ES
Antelope L-17 (Exist.) - Wellbore #1 - Wellbore #1	7,600.0	6,474.8	198.6	156.1	4.670	SF
Antelope M-17 (Exist.) - Wellbore #1 - Wellbore #1	8,884.7	6,710.7	160.1	84.9	2.128	CC, ES, SF
Antelope N-17 (Exist.) - Wellbore #1 - Wellbore #1	10,097.1	6,526.6	205.1	121.2	2.446	CC
Antelope N-17 (Exist.) - Wellbore #1 - Wellbore #1	10,100.0	6,526.6	205.1	121.2	2.445	ES, SF
Antelope P-17 Pad Sec.17-T5N-R62W						
Antelope 31-17 (Exist.) - Wellbore #1 - Wellbore #1	6,892.6	6,612.4	428.5	395.8	13.100	CC, ES
Antelope 31-17 (Exist.) - Wellbore #1 - Wellbore #1	6,900.0	6,611.3	428.6	395.8	13.087	SF
Antelope 32-17 (Exist.) - Wellbore #1 - Wellbore #1	8,304.8	6,874.1	393.3	325.7	5.816	CC, ES, SF
Antelope 33-17 (Exist.) - Wellbore #1 - Wellbore #1	9,508.6	6,555.5	452.9	379.8	6.195	CC, ES
Antelope 33-17 (Exist.) - Wellbore #1 - Wellbore #1	9,600.0	6,555.1	462.0	387.2	6.179	SF
Antelope 34-17 (Exist.) - Wellbore #1 - Wellbore #1	10,807.0	6,790.0	459.0	345.8	4.054	CC, ES, SF
Antelope P-T-17HZ (Exist.) - Wellbore #1 - Wellbore #1	232.3	230.3	21.8	21.2	32.805	CC
Antelope P-T-17HZ (Exist.) - Wellbore #1 - Wellbore #1	300.0	298.0	21.9	21.0	24.681	ES
Antelope P-T-17HZ (Exist.) - Wellbore #1 - Wellbore #1	600.0	596.8	32.9	30.9	16.149	SF
Antelope U-Y-17HNB - Wellbore #1 - Plan #3 (4-04-13)	200.0	200.0	18.2	17.5	27.014	CC
Antelope U-Y-17HNB - Wellbore #1 - Plan #3 (4-04-13)	300.0	300.0	18.3	17.2	16.429	ES
Antelope U-Y-17HNB - Wellbore #1 - Plan #3 (4-04-13)	500.0	499.1	24.8	22.8	12.228	SF

Offset Design		Antelope 21-17 Pad Sec.17-T5N-R62W - Antelope L-17 (Exist.) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft	
Survey Program: 492-MWD												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
6,700.0	6,380.7	6,461.2	6,377.6	24.3	20.3	45.81	-855.5	-1,255.5	910.0	880.6	29.44	30.914			
6,800.0	6,392.8	6,472.8	6,389.2	24.3	20.4	83.74	-855.5	-1,255.5	813.6	779.1	34.46	23.613			
6,900.0	6,393.0	6,473.2	6,389.5	24.4	20.4	89.58	-855.5	-1,255.5	717.0	682.2	34.83	20.585			
7,000.0	6,393.0	6,473.4	6,389.8	24.6	20.4	89.64	-855.5	-1,255.5	621.5	586.0	35.52	17.499			
7,100.0	6,393.0	6,473.6	6,390.0	25.0	20.4	89.71	-855.5	-1,255.5	527.7	491.4	36.38	14.507			
7,200.0	6,393.0	6,473.8	6,390.2	25.5	20.4	89.77	-855.5	-1,255.5	436.7	399.3	37.39	11.680			
7,300.0	6,393.0	6,474.1	6,390.4	26.2	20.4	89.84	-855.5	-1,255.5	350.5	312.0	38.52	9.099			
7,400.0	6,393.0	6,474.3	6,390.7	27.0	20.4	89.90	-855.5	-1,255.5	274.0	234.2	39.77	6.889			
7,500.0	6,393.0	6,474.5	6,390.9	28.0	20.4	89.97	-855.5	-1,255.5	217.4	176.3	41.11	5.288			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Project:	SEC.17-T5N-R62W	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Reference Site:	Antelope P-17 Pad Sec.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #4 (4-04-13)	Offset TVD Reference:	Offset Datum

Offset Design Antelope 21-17 Pad Sec.17-T5N-R62W - Antelope L-17 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 492-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,589.1	6,393.0	6,474.7	6,391.1	29.0	20.4	90.03	-855.5	-1,255.5	198.3	155.9	42.37	4.680	CC, ES
7,600.0	6,393.0	6,474.8	6,391.1	29.1	20.4	90.04	-855.5	-1,255.5	198.6	156.1	42.52	4.670	SF
7,700.0	6,393.0	6,475.0	6,391.4	30.3	20.4	90.11	-855.5	-1,255.5	227.2	183.2	44.00	5.164	
7,800.0	6,393.0	6,475.2	6,391.6	31.6	20.4	90.18	-855.5	-1,255.5	289.5	244.0	45.53	6.358	
7,900.0	6,393.0	6,475.5	6,391.9	32.9	20.4	90.25	-855.5	-1,255.5	368.8	321.7	47.11	7.829	
8,000.0	6,393.0	6,475.7	6,392.1	34.4	20.4	90.33	-855.5	-1,255.5	456.3	407.5	48.72	9.365	
8,100.0	6,393.0	6,476.0	6,392.4	35.8	20.4	90.40	-855.5	-1,255.5	548.1	497.7	50.37	10.881	
8,200.0	6,393.0	6,476.3	6,392.6	37.4	20.4	90.48	-855.5	-1,255.5	642.3	590.3	52.04	12.342	
8,300.0	6,393.0	6,476.5	6,392.9	38.9	20.4	90.55	-855.5	-1,255.5	738.1	684.3	53.74	13.734	
8,400.0	6,393.0	6,476.8	6,393.2	40.5	20.4	90.63	-855.5	-1,255.5	834.8	779.4	55.46	15.054	
8,500.0	6,393.0	6,477.1	6,393.5	42.1	20.4	90.71	-855.5	-1,255.5	932.3	875.1	57.19	16.300	

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Project:	SEC.17-T5N-R62W	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Reference Site:	Antelope P-17 Pad Sec.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #4 (4-04-13)	Offset TVD Reference:	Offset Datum

Offset Design Antelope 21-17 Pad Sec.17-T5N-R62W - Antelope M-17 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 525-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
7,900.0	6,393.0	6,724.9	6,353.3	32.9	35.9	95.81	-2,151.4	-1,241.7	997.5	939.6	57.87	17.236	
8,000.0	6,393.0	6,723.5	6,351.8	34.4	35.9	95.29	-2,151.4	-1,241.7	899.0	839.4	59.55	15.097	
8,100.0	6,393.0	6,722.0	6,350.4	35.8	35.9	94.78	-2,151.4	-1,241.7	800.8	739.5	61.25	13.074	
8,200.0	6,393.0	6,720.6	6,348.9	37.4	35.9	94.26	-2,151.4	-1,241.8	703.1	640.1	62.98	11.164	
8,300.0	6,393.0	6,719.1	6,347.5	38.9	35.9	93.74	-2,151.5	-1,241.8	606.1	541.4	64.73	9.365	
8,400.0	6,393.0	6,717.7	6,346.0	40.5	35.9	93.23	-2,151.5	-1,241.8	510.4	443.9	66.49	7.676	
8,500.0	6,393.0	6,716.2	6,344.6	42.1	35.9	92.71	-2,151.5	-1,241.8	416.6	348.3	68.27	6.102	
8,600.0	6,393.0	6,714.8	6,343.1	43.8	35.9	92.19	-2,151.5	-1,241.8	326.6	256.5	70.06	4.661	
8,700.0	6,393.0	6,713.3	6,341.7	45.4	35.9	91.68	-2,151.5	-1,241.8	244.4	172.5	71.86	3.401	
8,800.0	6,393.0	6,711.9	6,340.3	47.1	35.9	91.16	-2,151.6	-1,241.9	181.1	107.4	73.67	2.458	
8,884.7	6,393.0	6,710.7	6,339.0	48.6	35.9	90.73	-2,151.6	-1,241.9	160.1	84.9	75.21	2.128 CC, ES, SF	
8,900.0	6,393.0	6,710.5	6,338.8	48.8	35.9	90.65	-2,151.6	-1,241.9	160.8	85.3	75.49	2.130	
9,000.0	6,393.0	6,709.0	6,337.4	50.5	35.9	90.13	-2,151.6	-1,241.9	197.3	120.0	77.30	2.552	
9,100.0	6,393.0	6,707.6	6,335.9	52.3	35.9	89.62	-2,151.6	-1,241.9	268.3	189.2	79.12	3.391	
9,200.0	6,393.0	6,706.2	6,334.5	54.0	35.9	89.11	-2,151.6	-1,241.9	353.6	272.7	80.95	4.368	
9,300.0	6,393.0	6,704.7	6,333.1	55.8	35.9	88.59	-2,151.7	-1,242.0	445.1	362.3	82.77	5.377	
9,400.0	6,393.0	6,703.3	6,331.6	57.5	35.9	88.08	-2,151.7	-1,242.0	539.6	455.0	84.59	6.378	
9,500.0	6,393.0	6,701.9	6,330.2	59.3	35.9	87.57	-2,151.7	-1,242.0	635.7	549.3	86.41	7.357	
9,600.0	6,393.0	6,700.4	6,328.8	61.1	35.9	87.06	-2,151.7	-1,242.0	732.9	644.7	88.23	8.307	
9,700.0	6,393.0	6,699.0	6,327.4	62.9	35.9	86.55	-2,151.7	-1,242.0	830.8	740.8	90.05	9.226	
9,800.0	6,393.0	6,697.6	6,325.9	64.7	35.9	86.05	-2,151.8	-1,242.1	929.1	837.3	91.86	10.115	

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Project:	SEC.17-T5N-R62W	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Reference Site:	Antelope P-17 Pad Sec.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #4 (4-04-13)	Offset TVD Reference:	Offset Datum

Offset Design Antelope 21-17 Pad Sec.17-T5N-R62W - Antelope N-17 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 493-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,200.0	6,393.0	6,547.4	6,397.4	54.0	25.5	96.24	-3,362.5	-1,309.7	920.1	853.2	66.92	13.750	
9,300.0	6,393.0	6,545.0	6,395.1	55.8	25.5	95.59	-3,362.6	-1,309.7	822.9	754.1	68.81	11.960	
9,400.0	6,393.0	6,542.7	6,392.7	57.5	25.5	94.95	-3,362.7	-1,309.8	726.5	655.8	70.70	10.277	
9,500.0	6,393.0	6,540.4	6,390.4	59.3	25.5	94.30	-3,362.7	-1,309.8	631.3	558.7	72.59	8.697	
9,600.0	6,393.0	6,538.1	6,388.1	61.1	25.5	93.66	-3,362.8	-1,309.8	537.7	463.2	74.48	7.219	
9,700.0	6,393.0	6,535.8	6,385.8	62.9	25.5	93.03	-3,362.8	-1,309.8	446.9	370.5	76.37	5.852	
9,800.0	6,393.0	6,533.5	6,383.6	64.7	25.5	92.39	-3,362.9	-1,309.8	361.0	282.7	78.25	4.613	
9,900.0	6,393.0	6,531.2	6,381.3	66.5	25.5	91.76	-3,362.9	-1,309.9	284.5	204.3	80.14	3.550	
10,000.0	6,393.0	6,528.9	6,379.0	68.3	25.5	91.11	-3,363.0	-1,309.9	226.9	144.9	82.02	2.767	
10,097.1	6,393.0	6,526.6	6,376.7	70.1	25.5	90.47	-3,363.0	-1,309.9	205.1	121.2	83.84	2.446 CC	
10,100.0	6,393.0	6,526.6	6,376.6	70.1	25.5	90.45	-3,363.0	-1,309.9	205.1	121.2	83.89	2.445 ES, SF	
10,200.0	6,393.0	6,524.2	6,374.2	71.9	25.5	89.78	-3,363.1	-1,309.9	229.4	143.6	85.76	2.675	
10,300.0	6,393.0	6,521.8	6,371.8	73.8	25.5	89.11	-3,363.1	-1,309.9	288.4	200.7	87.63	3.291	
10,400.0	6,393.0	6,519.3	6,369.4	75.6	25.5	88.42	-3,363.2	-1,310.0	365.6	276.2	89.48	4.086	
10,500.0	6,393.0	6,516.8	6,366.9	77.4	25.5	87.73	-3,363.3	-1,310.0	451.9	360.6	91.32	4.948	
10,600.0	6,393.0	6,514.3	6,364.3	79.3	25.4	87.03	-3,363.3	-1,310.0	542.9	449.7	93.16	5.828	
10,700.0	6,393.0	6,511.7	6,361.8	81.1	25.4	86.32	-3,363.4	-1,310.0	636.6	541.6	94.98	6.702	
10,800.0	6,393.0	6,509.1	6,359.2	83.0	25.4	85.59	-3,363.4	-1,310.0	731.9	635.1	96.78	7.563	
10,900.0	6,393.0	6,506.5	6,356.6	84.8	25.4	84.86	-3,363.5	-1,310.1	828.4	729.8	98.57	8.403	
11,000.0	6,393.0	6,503.8	6,353.9	86.7	25.4	84.12	-3,363.6	-1,310.1	925.5	825.2	100.35	9.223	
11,032.9	6,393.0	6,502.9	6,353.0	87.3	25.4	83.88	-3,363.6	-1,310.1	957.7	856.7	100.93	9.489	

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Project:	SEC.17-T5N-R62W	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Reference Site:	Antelope P-17 Pad Sec.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #4 (4-04-13)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 561-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	13.9	13.9	0.0	0.0	98.91	-116.6	743.6	752.7	752.7	0.02	N/A	
100.0	100.0	113.3	113.3	0.1	0.1	98.92	-116.7	743.6	752.7	752.5	0.24	3,135.746	
200.0	200.0	212.6	212.6	0.3	0.2	98.94	-117.1	743.7	752.9	752.3	0.58	1,305.648	
300.0	300.0	312.0	312.0	0.6	0.4	-171.03	-117.6	743.9	754.8	753.9	0.91	830.281	
400.0	399.8	411.2	411.2	0.8	0.5	-171.02	-118.4	744.0	760.3	759.0	1.25	609.226	
500.0	499.5	510.1	510.1	1.0	0.6	-176.91	-119.3	744.3	769.3	767.6	1.61	479.192	
600.0	598.8	643.2	643.1	1.3	0.8	175.43	-120.3	742.9	780.3	778.3	2.06	377.893	
700.0	697.7	811.0	810.2	1.6	1.2	171.08	-120.5	728.2	786.2	783.6	2.62	300.083	
800.0	796.0	963.3	960.5	2.0	1.7	168.74	-122.7	703.6	788.4	785.2	3.21	245.651	
900.0	893.7	1,114.4	1,107.5	2.4	2.3	167.94	-125.5	668.9	787.1	783.2	3.86	204.083	
1,000.0	991.1	1,259.5	1,246.4	2.9	3.1	169.21	-127.7	627.2	781.3	776.7	4.56	171.295	
1,100.0	1,088.5	1,401.4	1,379.6	3.3	4.0	170.44	-127.3	578.2	769.1	763.8	5.31	144.931	
1,200.0	1,185.9	1,497.8	1,469.2	3.8	4.7	171.38	-127.5	542.6	755.0	749.1	5.91	127.744	
1,300.0	1,283.3	1,587.9	1,553.1	4.3	5.3	172.29	-127.7	510.0	741.7	735.3	6.48	114.412	
1,400.0	1,380.7	1,677.5	1,637.1	4.8	5.8	173.19	-127.9	478.6	729.9	722.8	7.07	103.244	
1,500.0	1,478.1	1,768.8	1,723.0	5.3	6.4	174.06	-127.4	447.7	719.4	711.7	7.67	93.845	
1,600.0	1,575.5	1,859.0	1,808.2	5.7	7.0	174.92	-127.0	418.2	710.1	701.8	8.27	85.871	
1,700.0	1,672.9	1,952.1	1,896.5	6.2	7.6	175.83	-127.0	388.6	702.1	693.2	8.89	78.939	
1,800.0	1,770.3	2,058.2	1,997.1	6.7	8.3	176.90	-127.0	354.8	694.4	684.8	9.60	72.360	
1,900.0	1,867.7	2,153.1	2,086.8	7.2	8.9	177.96	-127.7	324.0	686.4	676.1	10.28	66.760	
2,000.0	1,965.1	2,243.5	2,172.6	7.7	9.4	178.92	-128.0	295.6	679.6	668.6	10.94	62.093	
2,100.0	2,062.5	2,352.0	2,275.6	8.2	10.1	-179.87	-128.6	261.2	672.8	661.1	11.72	57.420	
2,200.0	2,159.9	2,446.0	2,364.7	8.7	10.7	-178.82	-128.9	231.3	666.1	653.6	12.44	53.539	
2,300.0	2,257.3	2,548.0	2,461.4	9.2	11.4	-177.59	-130.1	198.9	660.0	646.8	13.24	49.858	
2,400.0	2,354.7	2,636.0	2,544.7	9.7	11.9	-176.41	-132.2	170.8	654.7	640.6	14.01	46.741	
2,500.0	2,452.1	2,724.5	2,629.1	10.1	12.5	-175.27	-134.5	144.0	651.2	636.5	14.78	44.069	
2,600.0	2,549.5	2,836.7	2,735.6	10.6	13.2	-173.66	-138.6	109.0	647.8	632.0	15.75	41.115	
2,700.0	2,646.9	2,930.4	2,824.0	11.1	13.8	-172.16	-143.2	78.5	644.2	627.5	16.69	38.591	
2,800.0	2,744.3	3,022.2	2,911.1	11.6	14.4	-170.72	-147.6	49.5	641.9	624.3	17.63	36.409	
2,860.2	2,802.9	3,073.6	2,960.0	11.9	14.7	-169.94	-150.1	34.0	641.4	623.3	18.17	35.308	
2,900.0	2,841.7	3,108.0	2,992.8	12.1	14.9	-169.43	-151.9	23.9	641.6	623.1	18.53	34.629	
3,000.0	2,939.1	3,233.3	3,111.8	12.6	15.7	-167.52	-157.4	-15.1	640.4	620.6	19.75	32.423	
3,100.0	3,036.5	3,330.7	3,204.0	13.1	16.3	-166.15	-159.3	-46.3	637.4	616.7	20.76	30.707	
3,200.0	3,133.9	3,420.2	3,289.6	13.6	16.8	-165.07	-160.4	-72.5	636.7	615.0	21.67	29.378	
3,300.0	3,231.3	3,541.7	3,405.5	14.1	17.6	-163.67	-160.2	-108.8	634.9	612.1	22.79	27.855	
3,400.0	3,328.7	3,670.7	3,527.3	14.6	18.4	-162.22	-156.1	-151.2	629.1	605.1	24.01	26.198	
3,500.0	3,426.1	3,769.1	3,618.6	15.1	19.1	-160.70	-154.5	-187.8	621.1	595.9	25.21	24.639	
3,600.0	3,523.5	3,865.0	3,707.2	15.6	19.9	-159.02	-154.6	-224.3	614.0	587.5	26.49	23.177	
3,700.0	3,620.9	3,960.0	3,795.4	16.1	20.6	-157.38	-154.4	-259.8	607.8	580.1	27.78	21.879	
3,800.0	3,718.3	4,047.1	3,876.7	16.5	21.2	-155.97	-154.1	-290.9	603.3	574.3	28.98	20.821	
3,900.0	3,815.7	4,140.6	3,964.6	17.0	21.9	-154.52	-154.1	-322.9	600.6	570.4	30.22	19.873	
3,957.9	3,872.1	4,186.7	4,008.1	17.3	22.2	-153.83	-154.3	-338.0	600.0	569.1	30.86	19.442	
4,000.0	3,913.1	4,219.0	4,038.8	17.5	22.4	-153.36	-154.9	-348.3	600.3	569.0	31.31	19.173	
4,100.0	4,010.5	4,307.2	4,122.9	18.0	22.9	-152.13	-157.2	-374.6	603.4	570.9	32.46	18.586	
4,200.0	4,107.9	4,404.3	4,216.3	18.5	23.5	-151.02	-158.9	-401.2	607.6	574.0	33.61	18.079	
4,300.0	4,205.3	4,505.9	4,314.3	19.0	24.0	-150.05	-159.5	-427.7	611.9	577.2	34.71	17.630	
4,400.0	4,302.7	4,602.4	4,407.7	19.5	24.5	-149.26	-159.2	-452.1	616.3	580.6	35.73	17.251	
4,500.0	4,400.1	4,693.7	4,496.4	20.0	24.9	-148.62	-159.0	-473.7	621.8	585.1	36.66	16.959	
4,600.0	4,497.5	4,790.6	4,591.0	20.5	25.4	-148.10	-158.7	-494.7	628.4	590.8	37.56	16.729	
4,700.0	4,594.9	4,881.5	4,680.0	21.0	25.8	-147.74	-158.2	-513.2	635.7	597.3	38.37	16.566	
4,800.0	4,692.3	4,975.9	4,772.8	21.5	26.1	-147.47	-158.1	-530.8	644.3	605.2	39.15	16.457	
4,900.0	4,789.7	5,072.7	4,868.1	22.0	26.5	-147.31	-157.7	-547.5	653.5	613.6	39.88	16.386	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Antelope P-17 Pad Sec.17-T5N-R62W - Antelope 31-17 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 561-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,000.0	4,887.1	5,158.4	4,952.7	22.5	26.8	-147.30	-157.2	-560.6	663.7	623.2	40.50	16.388		
5,100.0	4,984.5	5,243.8	5,037.5	23.0	27.0	-147.40	-157.7	-571.5	676.3	635.2	41.06	16.472		
5,200.0	5,082.0	5,332.3	5,125.5	23.4	27.3	-147.65	-158.8	-580.8	690.4	648.9	41.55	16.618		
5,300.0	5,180.0	5,425.6	5,218.5	23.8	27.5	-148.01	-160.1	-588.8	703.6	661.7	41.93	16.782		
5,400.0	5,278.6	5,521.4	5,313.9	24.1	27.7	-148.26	-161.3	-596.0	714.4	672.1	42.28	16.894		
5,500.0	5,377.7	5,616.9	5,409.2	24.3	27.9	-148.41	-162.5	-602.2	722.8	680.2	42.62	16.960		
5,600.0	5,477.3	5,713.5	5,505.7	24.5	28.0	-148.46	-163.6	-607.5	728.7	685.8	42.92	16.976		
5,700.0	5,577.1	5,809.9	5,602.0	24.7	28.2	-148.41	-164.5	-611.8	732.1	688.9	43.21	16.944		
5,800.0	5,677.1	5,901.3	5,693.3	24.8	28.3	-148.25	-165.8	-615.2	733.2	689.8	43.47	16.869		
5,900.0	5,777.1	5,995.1	5,787.1	24.9	28.4	145.46	-167.1	-616.6	733.6	690.3	43.36	16.919		
6,000.0	5,877.1	6,096.3	5,888.3	25.0	28.5	-35.53	-168.2	-617.4	734.1	690.1	44.03	16.675		
6,100.0	5,976.3	6,194.6	5,986.5	25.1	28.6	-36.49	-168.9	-617.7	725.9	683.2	42.76	16.976		
6,200.0	6,071.8	6,289.1	6,081.0	25.0	28.7	-39.48	-169.4	-617.4	703.1	663.4	39.69	17.713		
6,300.0	6,159.9	6,377.4	6,169.3	24.9	28.8	-44.84	-169.9	-617.0	667.0	631.6	35.37	18.856		
6,400.0	6,237.5	6,455.2	6,247.2	24.8	28.8	-52.87	-170.3	-616.6	620.5	589.4	31.17	19.910		
6,500.0	6,301.6	6,519.6	6,311.5	24.6	28.9	-63.35	-170.5	-616.3	568.0	538.9	29.09	19.526		
6,600.0	6,350.0	6,567.4	6,359.3	24.5	28.9	-74.56	-170.8	-616.0	515.1	485.4	29.70	17.344		
6,700.0	6,380.7	6,598.1	6,390.0	24.3	28.9	-83.88	-170.9	-615.7	469.3	438.1	31.18	15.050		
6,800.0	6,392.8	6,610.6	6,402.6	24.3	29.0	-89.11	-171.0	-615.6	438.4	406.2	32.21	13.611		
6,892.6	6,394.1	6,612.4	6,404.4	24.4	29.0	-89.50	-171.0	-615.6	428.5	395.8	32.71	13.100 CC, ES		
6,900.0	6,393.0	6,611.3	6,403.3	24.4	29.0	-89.51	-171.0	-615.6	428.6	395.8	32.75	13.087 SF		
7,000.0	6,393.0	6,611.9	6,403.9	24.6	29.0	-89.58	-171.0	-615.6	441.8	408.3	33.44	13.209		
7,100.0	6,393.0	6,612.5	6,404.4	25.0	29.0	-89.66	-171.0	-615.6	476.1	441.7	34.32	13.873		
7,200.0	6,393.0	6,613.0	6,405.0	25.5	29.0	-89.73	-171.0	-615.6	527.4	492.0	35.34	14.923		
7,300.0	6,393.0	6,613.6	6,405.6	26.2	29.0	-89.81	-171.0	-615.6	591.3	554.8	36.49	16.203		
7,400.0	6,393.0	6,614.2	6,406.1	27.0	29.0	-89.88	-171.0	-615.6	664.1	626.4	37.75	17.592		
7,500.0	6,393.0	6,614.7	6,406.7	28.0	29.0	-89.96	-171.0	-615.6	743.4	704.2	39.10	19.010		
7,600.0	6,393.0	6,615.3	6,407.2	29.1	29.0	-90.03	-171.0	-615.6	827.1	786.5	40.53	20.406		
7,700.0	6,393.0	6,615.8	6,407.8	30.3	29.0	-90.10	-171.0	-615.6	914.1	872.1	42.02	21.752		

Antelope P-17 Pad Sec.17-T5N-R62W - Antelope 32-17 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 561-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	14.3	14.3	0.0	0.0	99.97	-131.1	746.4	757.8	757.8	0.02	N/A		
100.0	100.0	116.3	116.3	0.1	0.1	99.99	-131.4	746.1	757.6	757.4	0.24	3,094.046		
200.0	200.0	218.3	218.3	0.3	0.3	100.05	-132.2	745.6	757.2	756.6	0.59	1,292.901		
218.1	218.1	236.8	236.8	0.4	0.3	-169.93	-132.4	745.4	757.2	756.5	0.65	1,160.826		
300.0	300.0	320.4	320.3	0.6	0.4	-169.86	-133.4	744.6	758.2	757.3	0.93	817.447		
400.0	399.8	422.3	422.2	0.8	0.5	-169.78	-135.1	743.3	762.4	761.1	1.27	599.999		
500.0	499.5	524.0	524.0	1.0	0.6	-175.57	-137.2	741.6	769.7	768.1	1.63	471.608		
600.0	598.8	633.1	633.0	1.3	0.8	176.93	-140.3	739.1	779.6	777.5	2.08	374.178		
700.0	697.7	760.9	760.4	1.6	1.2	172.77	-146.1	732.4	790.2	787.6	2.62	301.742		
800.0	796.0	879.7	878.4	2.0	1.5	170.49	-153.9	721.6	800.5	797.3	3.17	252.592		
900.0	893.7	999.3	996.5	2.4	1.9	169.86	-166.5	707.4	812.5	808.7	3.78	214.851		
1,000.0	991.1	1,141.4	1,135.2	2.9	2.5	171.90	-185.0	682.9	821.2	816.6	4.55	180.479		
1,100.0	1,088.5	1,234.2	1,225.0	3.3	2.9	173.41	-199.4	664.4	828.7	823.5	5.20	159.387		
1,200.0	1,185.9	1,343.9	1,330.1	3.8	3.5	175.42	-219.7	640.4	835.7	829.7	6.01	139.029		
1,300.0	1,283.3	1,433.8	1,415.4	4.3	4.1	177.25	-239.4	619.8	843.7	836.9	6.79	124.186		
1,400.0	1,380.7	1,526.2	1,502.1	4.8	4.7	179.30	-262.5	597.8	853.0	845.4	7.66	111.410		
1,500.0	1,478.1	1,609.5	1,579.6	5.3	5.3	-178.75	-285.5	578.0	864.5	856.0	8.52	101.487		
1,600.0	1,575.5	1,699.2	1,662.7	5.7	5.9	-176.60	-312.0	556.5	878.0	868.5	9.48	92.661		
1,700.0	1,672.9	1,785.0	1,741.5	6.2	6.6	-174.51	-338.8	536.1	893.7	883.3	10.44	85.569		
1,800.0	1,770.3	1,896.3	1,843.1	6.7	7.4	-171.78	-374.6	507.9	910.2	898.5	11.64	78.162		
1,900.0	1,867.7	1,996.1	1,933.7	7.2	8.2	-169.37	-406.5	480.7	926.6	913.8	12.77	72.580		
2,000.0	1,965.1	2,108.7	2,035.8	7.7	9.0	-166.74	-441.7	449.0	943.5	929.5	13.99	67.444		
2,100.0	2,062.5	2,231.8	2,145.8	8.2	10.1	-163.81	-479.9	409.1	958.5	943.1	15.43	62.108		
2,200.0	2,159.9	2,318.8	2,222.3	8.7	10.9	-161.66	-507.9	378.7	973.9	957.3	16.63	58.564		
2,300.0	2,257.3	2,385.3	2,280.4	9.2	11.5	-160.01	-530.4	355.5	992.2	974.6	17.63	56.297		
7,400.0	6,393.0	6,855.9	6,390.9	27.0	39.9	-87.66	-1,581.9	-677.5	986.4	933.2	53.16	18.554		
7,500.0	6,393.0	6,857.9	6,392.9	28.0	39.9	-87.95	-1,582.0	-677.5	895.6	841.0	54.55	16.418		
7,600.0	6,393.0	6,859.9	6,395.0	29.1	39.9	-88.25	-1,582.0	-677.5	807.0	750.9	56.01	14.407		
7,700.0	6,393.0	6,861.9	6,397.0	30.3	39.9	-88.54	-1,582.0	-677.5	721.3	663.8	57.54	12.536		
7,800.0	6,393.0	6,863.9	6,399.0	31.6	39.9	-88.83	-1,582.1	-677.5	639.8	580.7	59.12	10.823		
7,900.0	6,393.0	6,866.0	6,401.0	32.9	39.9	-89.13	-1,582.1	-677.6	564.3	503.6	60.74	9.291		
8,000.0	6,393.0	6,868.0	6,403.0	34.4	39.9	-89.42	-1,582.2	-677.6	497.5	435.1	62.40	7.974		
8,100.0	6,393.0	6,870.0	6,405.1	35.8	39.9	-89.72	-1,582.2	-677.6	443.4	379.3	64.08	6.919		
8,200.0	6,393.0	6,872.0	6,407.1	37.4	39.9	-90.01	-1,582.2	-677.6	407.0	341.2	65.80	6.186		
8,300.0	6,393.0	6,874.0	6,409.1	38.9	40.0	-90.30	-1,582.3	-677.6	393.3	325.8	67.54	5.824		
8,304.8	6,393.0	6,874.1	6,409.2	39.0	40.0	-90.32	-1,582.3	-677.6	393.3	325.7	67.62	5.816 CC, ES, SF		
8,400.0	6,393.0	6,876.0	6,411.1	40.5	40.0	-90.60	-1,582.3	-677.6	404.7	335.4	69.29	5.840		
8,500.0	6,393.0	6,878.1	6,413.1	42.1	40.0	-90.89	-1,582.4	-677.6	439.1	368.0	71.06	6.179		
8,600.0	6,393.0	6,880.1	6,415.1	43.8	40.0	-91.19	-1,582.4	-677.6	491.7	418.9	72.85	6.750		
8,700.0	6,393.0	6,882.1	6,417.2	45.4	40.0	-91.48	-1,582.4	-677.7	557.5	482.9	74.64	7.469		
8,800.0	6,393.0	6,884.1	6,419.2	47.1	40.0	-91.77	-1,582.5	-677.7	632.3	555.9	76.45	8.271		
8,900.0	6,393.0	6,886.1	6,421.2	48.8	40.0	-92.07	-1,582.5	-677.7	713.3	635.1	78.26	9.114		
9,000.0	6,393.0	6,888.2	6,423.2	50.5	40.0	-92.36	-1,582.6	-677.7	798.6	718.6	80.09	9.972		
9,100.0	6,393.0	6,890.2	6,425.2	52.3	40.0	-92.66	-1,582.6	-677.7	887.0	805.1	81.91	10.829		
9,200.0	6,393.0	6,892.2	6,427.3	54.0	40.0	-92.95	-1,582.7	-677.7	977.7	893.9	83.74	11.674		

Antelope P-17 Pad Sec.17-T5N-R62W - Antelope 33-17 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 554-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
8,700.0	6,393.0	6,558.9	6,393.6	45.4	25.4	-90.46	-2,787.0	-640.9	926.7	868.2	58.50	15.843		
8,800.0	6,393.0	6,558.5	6,393.2	47.1	25.4	-90.40	-2,787.0	-640.9	840.9	780.6	60.27	13.952		
8,900.0	6,393.0	6,558.1	6,392.8	48.8	25.4	-90.35	-2,787.0	-640.9	758.6	696.5	62.06	12.224		
9,000.0	6,393.0	6,557.7	6,392.4	50.5	25.4	-90.30	-2,787.0	-640.9	681.0	617.1	63.85	10.665		
9,100.0	6,393.0	6,557.3	6,391.9	52.3	25.4	-90.24	-2,787.0	-640.9	609.9	544.3	65.65	9.290		
9,200.0	6,393.0	6,556.8	6,391.5	54.0	25.4	-90.19	-2,787.0	-640.9	548.0	480.5	67.47	8.122		
9,300.0	6,393.0	6,556.4	6,391.1	55.8	25.4	-90.14	-2,787.0	-640.9	498.6	429.3	69.28	7.196		
9,400.0	6,393.0	6,556.0	6,390.6	57.5	25.4	-90.08	-2,787.0	-640.9	465.7	394.6	71.11	6.549		
9,500.0	6,393.0	6,555.5	6,390.2	59.3	25.4	-90.03	-2,787.0	-640.9	452.9	380.0	72.94	6.210		
9,508.6	6,393.0	6,555.5	6,390.2	59.5	25.4	-90.02	-2,787.0	-640.9	452.9	379.8	73.09	6.195 CC, ES		
9,600.0	6,393.0	6,555.1	6,389.8	61.1	25.4	-89.97	-2,787.0	-640.9	462.0	387.2	74.77	6.179 SF		
9,700.0	6,393.0	6,554.7	6,389.4	62.9	25.4	-89.92	-2,787.0	-640.9	491.7	415.0	76.61	6.418		
9,800.0	6,393.0	6,554.2	6,388.9	64.7	25.4	-89.86	-2,787.0	-640.9	538.5	460.1	78.45	6.864		
9,900.0	6,393.0	6,553.8	6,388.5	66.5	25.4	-89.81	-2,787.0	-640.9	598.6	518.3	80.30	7.454		
10,000.0	6,393.0	6,553.4	6,388.0	68.3	25.4	-89.75	-2,787.0	-640.9	668.3	586.1	82.15	8.135		
10,100.0	6,393.0	6,552.9	6,387.6	70.1	25.4	-89.70	-2,787.0	-640.9	744.9	660.9	84.01	8.867		
10,200.0	6,393.0	6,552.5	6,387.2	71.9	25.4	-89.64	-2,787.0	-640.9	826.5	740.7	85.86	9.626		
10,300.0	6,393.0	6,552.0	6,386.7	73.8	25.4	-89.58	-2,787.0	-640.9	911.8	824.1	87.72	10.395		
10,400.0	6,393.0	6,551.6	6,386.3	75.6	25.4	-89.53	-2,787.0	-640.9	999.9	910.3	89.58	11.161		

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Project:	SEC.17-T5N-R62W	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Reference Site:	Antelope P-17 Pad Sec.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #4 (4-04-13)	Offset TVD Reference:	Offset Datum

Offset Design Antelope P-17 Pad Sec.17-T5N-R62W - Antelope 34-17 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 554-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	6,393.0	6,782.6	6,375.8	68.3	37.3	-88.35	-4,085.2	-659.6	928.3	830.4	97.99	9.474	
10,100.0	6,393.0	6,783.5	6,376.7	70.1	37.3	-88.46	-4,085.2	-659.6	842.9	743.0	99.87	8.440	
10,200.0	6,393.0	6,784.5	6,377.6	71.9	37.3	-88.58	-4,085.3	-659.6	761.0	659.2	101.75	7.479	
10,300.0	6,393.0	6,785.4	6,378.5	73.8	37.3	-88.69	-4,085.3	-659.6	683.9	580.2	103.63	6.599	
10,400.0	6,393.0	6,786.3	6,379.4	75.6	37.3	-88.80	-4,085.3	-659.6	613.4	507.9	105.52	5.813	
10,500.0	6,393.0	6,787.2	6,380.3	77.4	37.3	-88.92	-4,085.3	-659.6	552.2	444.8	107.40	5.141	
10,600.0	6,393.0	6,788.0	6,381.2	79.3	37.3	-89.03	-4,085.3	-659.5	503.5	394.2	109.29	4.607	
10,700.0	6,393.0	6,788.9	6,382.1	81.1	37.3	-89.13	-4,085.3	-659.5	471.3	360.1	111.18	4.239	
10,800.0	6,393.0	6,790.0	6,383.1	83.0	37.3	-89.27	-4,085.3	-659.5	459.0	346.0	113.07	4.060	
10,807.0	6,393.0	6,790.0	6,383.1	83.1	37.3	-89.27	-4,085.3	-659.5	459.0	345.8	113.21	4.054 CC, ES, SF	
10,900.0	6,393.0	6,790.6	6,383.8	84.8	37.3	-89.35	-4,085.3	-659.5	468.3	353.3	114.96	4.074	
11,000.0	6,393.0	6,791.5	6,384.7	86.7	37.3	-89.46	-4,085.3	-659.5	497.9	381.0	116.86	4.261	
11,032.9	6,393.0	6,791.8	6,385.0	87.3	37.3	-89.50	-4,085.3	-659.5	511.6	394.1	117.48	4.355	

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Project:	SEC.17-T5N-R62W	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Reference Site:	Antelope P-17 Pad Sec.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #4 (4-04-13)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 511-MWD													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	21.8	0.0	21.9					
100.0	100.0	98.0	98.0	0.1	0.1	-0.04	21.8	0.0	21.8	21.6	0.22	98.050		
200.0	200.0	198.0	198.0	0.3	0.2	-0.18	21.8	-0.1	21.8	21.3	0.56	39.002		
232.3	232.3	230.3	230.3	0.4	0.3	90.24	21.8	-0.1	21.8	21.2	0.67	32.805 CC		
300.0	300.0	298.0	298.0	0.6	0.3	94.17	21.8	-0.2	21.9	21.0	0.89	24.681 ES		
400.0	399.8	397.8	397.8	0.8	0.4	107.04	21.8	-0.3	22.8	21.6	1.22	18.681		
500.0	499.5	497.5	497.5	1.0	0.6	119.15	21.8	-0.4	26.4	24.8	1.58	16.676		
600.0	598.8	596.8	596.8	1.3	0.8	129.54	22.0	-0.7	32.9	30.9	2.04	16.149 SF		
700.0	697.7	695.8	695.8	1.6	1.0	139.69	22.4	-1.2	43.2	40.7	2.50	17.271		
800.0	796.0	794.0	794.0	2.0	1.2	147.89	22.8	-1.7	57.6	54.6	2.96	19.443		
900.0	893.7	890.7	890.7	2.4	1.4	153.68	23.8	-1.2	77.0	73.6	3.41	22.564		
1,000.0	991.1	987.9	987.8	2.9	1.6	158.64	25.3	0.0	99.0	95.1	3.85	25.685		
1,100.0	1,088.5	1,083.3	1,083.2	3.3	1.8	160.86	28.5	2.1	122.3	117.9	4.31	28.370		
1,200.0	1,185.9	1,177.7	1,177.3	3.8	2.0	161.37	33.9	5.9	147.2	142.4	4.79	30.738		
1,300.0	1,283.3	1,270.3	1,269.4	4.3	2.2	160.89	41.5	11.9	174.2	168.9	5.29	32.910		
1,400.0	1,380.7	1,361.2	1,359.4	4.8	2.4	159.88	50.9	20.0	203.5	197.7	5.82	34.953		
1,500.0	1,478.1	1,452.5	1,449.5	5.3	2.7	158.78	61.6	30.2	234.8	228.5	6.37	36.852		
1,600.0	1,575.5	1,549.3	1,544.9	5.7	3.0	157.69	73.7	41.4	266.6	259.6	6.94	38.396		
1,700.0	1,672.9	1,644.6	1,639.0	6.2	3.3	156.97	85.1	51.9	298.0	290.5	7.50	39.722		
1,800.0	1,770.3	1,742.6	1,735.7	6.7	3.6	156.37	96.8	62.1	328.8	320.7	8.08	40.713		
1,900.0	1,867.7	1,836.6	1,828.6	7.2	3.9	155.88	108.1	71.8	359.5	350.9	8.65	41.577		
2,000.0	1,965.1	1,936.7	1,927.5	7.7	4.2	155.50	119.8	81.4	389.5	380.3	9.23	42.185		
2,100.0	2,062.5	2,029.7	2,019.5	8.2	4.5	155.28	130.0	90.1	419.4	409.6	9.80	42.806		
2,200.0	2,159.9	2,122.9	2,111.8	8.7	4.8	155.23	139.3	99.5	449.9	439.6	10.36	43.442		
2,300.0	2,257.3	2,222.2	2,210.0	9.2	5.1	155.07	150.1	109.0	480.0	469.0	10.94	43.863		
2,400.0	2,354.7	2,315.2	2,302.0	9.7	5.4	154.84	161.0	117.9	510.0	498.5	11.52	44.253		
2,500.0	2,452.1	2,407.8	2,393.4	10.1	5.7	154.64	171.8	127.2	540.5	528.4	12.11	44.640		
2,600.0	2,549.5	2,499.4	2,484.1	10.6	6.0	154.55	181.7	136.9	571.5	558.9	12.68	45.075		
2,700.0	2,646.9	2,592.5	2,576.0	11.1	6.3	154.53	191.2	147.3	603.2	589.9	13.25	45.521		
2,800.0	2,744.3	2,692.4	2,674.8	11.6	6.6	154.43	202.1	158.1	634.4	620.5	13.85	45.814		
2,900.0	2,841.7	2,785.6	2,766.7	12.1	7.0	154.24	213.5	167.7	665.2	650.8	14.44	46.068		
3,000.0	2,939.1	2,876.5	2,856.3	12.6	7.3	154.01	225.2	177.9	696.9	681.9	15.04	46.343		
3,100.0	3,036.5	2,979.5	2,957.9	13.1	7.6	153.85	237.8	188.8	728.0	712.3	15.66	46.493		
3,200.0	3,133.9	3,077.3	3,054.7	13.6	7.9	153.80	248.5	198.6	758.4	742.2	16.25	46.679		
3,300.0	3,231.3	3,178.9	3,155.2	14.1	8.3	153.76	259.4	208.4	788.6	771.7	16.85	46.810		
3,400.0	3,328.7	3,282.4	3,257.8	14.6	8.6	153.75	270.2	217.1	817.6	800.1	17.44	46.867		
3,500.0	3,426.1	3,372.8	3,347.4	15.1	8.9	153.76	279.3	224.6	846.3	828.3	18.01	46.997		
3,600.0	3,523.5	3,460.0	3,433.7	15.6	9.2	153.74	288.7	232.6	876.1	857.5	18.57	47.168		
3,700.0	3,620.9	3,545.8	3,518.5	16.1	9.4	153.66	298.7	241.3	906.7	887.5	19.15	47.350		
3,800.0	3,718.3	3,628.9	3,600.4	16.5	9.8	153.52	309.6	250.7	938.5	918.7	19.73	47.556		
3,900.0	3,815.7	3,713.5	3,683.4	17.0	10.1	153.29	322.1	261.2	971.4	951.1	20.34	47.755		

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well Antelope K-O-17HNB
Project:	SEC.17-T5N-R62W	TVD Reference:	WELL @ 4708.0ft (RKB - 13')
Reference Site:	Antelope P-17 Pad Sec.17-T5N-R62W	MD Reference:	WELL @ 4708.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Antelope K-O-17HNB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #4 (4-04-13)	Offset TVD Reference:	Offset Datum

Offset Design		Antelope P-17 Pad Sec.17-T5N-R62W - Antelope U-Y-17HNB - Wellbore #1 - Plan #3 (4-04-13)											Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-18.2	0.0	18.2	18.2	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-18.2	0.0	18.2	18.0	0.22	81.043		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-18.2	0.0	18.2	17.5	0.67	27.014 CC		
227.6	227.6	227.6	227.6	0.4	0.4	-90.42	-18.2	0.0	18.2	17.4	0.80	22.893		
300.0	300.0	300.0	300.0	0.6	0.6	-95.47	-18.2	0.0	18.3	17.2	1.11	16.429 ES		
400.0	399.8	399.8	399.8	0.8	0.8	-110.92	-18.2	0.0	19.5	17.9	1.56	12.481		
500.0	499.5	499.1	499.1	1.0	1.0	-139.61	-17.6	1.6	24.8	22.8	2.03	12.228 SF		
600.0	598.8	597.2	597.1	1.3	1.2	-164.93	-15.8	6.3	38.1	35.6	2.50	15.245		
700.0	697.7	693.6	693.0	1.6	1.4	-179.10	-12.8	14.0	58.9	55.9	2.97	19.845		
800.0	796.0	787.7	786.5	2.0	1.7	172.75	-8.8	24.5	86.2	82.7	3.44	25.047		
900.0	893.7	879.2	877.0	2.4	2.0	167.93	-3.9	37.3	119.3	115.4	3.92	30.424		
1,000.0	991.1	968.4	964.7	2.9	2.3	166.10	1.9	52.5	156.2	151.8	4.41	35.416		
1,100.0	1,088.5	1,055.5	1,049.8	3.3	2.6	164.54	8.5	69.7	195.7	190.8	4.92	39.810		
1,200.0	1,185.9	1,140.5	1,132.3	3.8	3.0	163.18	15.8	88.9	237.7	232.3	5.43	43.743		
1,300.0	1,283.3	1,223.3	1,212.0	4.3	3.4	161.98	23.8	109.7	282.1	276.1	5.96	47.316		
1,400.0	1,380.7	1,303.8	1,288.9	4.8	3.9	160.90	32.4	132.0	328.9	322.4	6.50	50.600		
1,500.0	1,478.1	1,387.2	1,367.9	5.3	4.4	159.90	41.9	156.9	377.6	370.6	7.06	53.494		
1,600.0	1,575.5	1,474.2	1,450.3	5.7	4.9	159.08	51.9	183.1	426.6	419.0	7.62	55.959		
1,700.0	1,672.9	1,561.2	1,532.7	6.2	5.5	158.42	61.9	209.2	475.7	467.5	8.19	58.063		
1,800.0	1,770.3	1,648.3	1,615.1	6.7	6.0	157.89	72.0	235.4	524.8	516.1	8.77	59.869		
1,900.0	1,867.7	1,735.3	1,697.5	7.2	6.6	157.45	82.0	261.6	574.0	564.6	9.34	61.423		
2,000.0	1,965.1	1,822.3	1,779.8	7.7	7.2	157.08	92.0	287.7	623.1	613.2	9.93	62.773		
2,100.0	2,062.5	1,909.3	1,862.2	8.2	7.7	156.76	102.0	313.9	672.3	661.8	10.51	63.956		
2,200.0	2,159.9	1,996.3	1,944.6	8.7	8.3	156.48	112.1	340.1	721.5	710.4	11.10	64.999		
2,300.0	2,257.3	2,083.3	2,027.0	9.2	8.9	156.25	122.1	366.2	770.7	759.0	11.69	65.923		
2,400.0	2,354.7	2,170.4	2,109.4	9.7	9.5	156.03	132.1	392.4	819.9	807.6	12.28	66.749		
2,500.0	2,452.1	2,257.4	2,191.7	10.1	10.0	155.85	142.1	418.5	869.1	856.3	12.88	67.492		
2,600.0	2,549.5	2,344.4	2,274.1	10.6	10.6	155.68	152.1	444.7	918.4	904.9	13.47	68.161		
2,700.0	2,646.9	2,431.4	2,356.5	11.1	11.2	155.53	162.2	470.9	967.6	953.5	14.07	68.768		

Reference Depths are relative to WELL @ 4708.0ft (RKB - 13')	Coordinates are relative to: Antelope K-O-17HNB
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.75°



Coordinates are relative to: Antelope K-O-17HNB
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.75°

