

BONANZA CREEK ENERGY OPERATING

Well Name: **State Pronghorn F-J-16HNB**

Surface Location: Pronghorn F-16 Pad Sec.16-T5N-R61W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4638.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1393828.58	3356678.70	40.407390	-104.219150	

RKB - 13' WELL @ 4651.0ft (RKB - 13')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 470'FSL & 1341'FWL	6107.0	-4484.7	80.8	Point
T1 470'FNL & 1353'FWL	6107.0	-98.4	94.7	Point



Azimuths to True North
Magnetic North: 8.37°

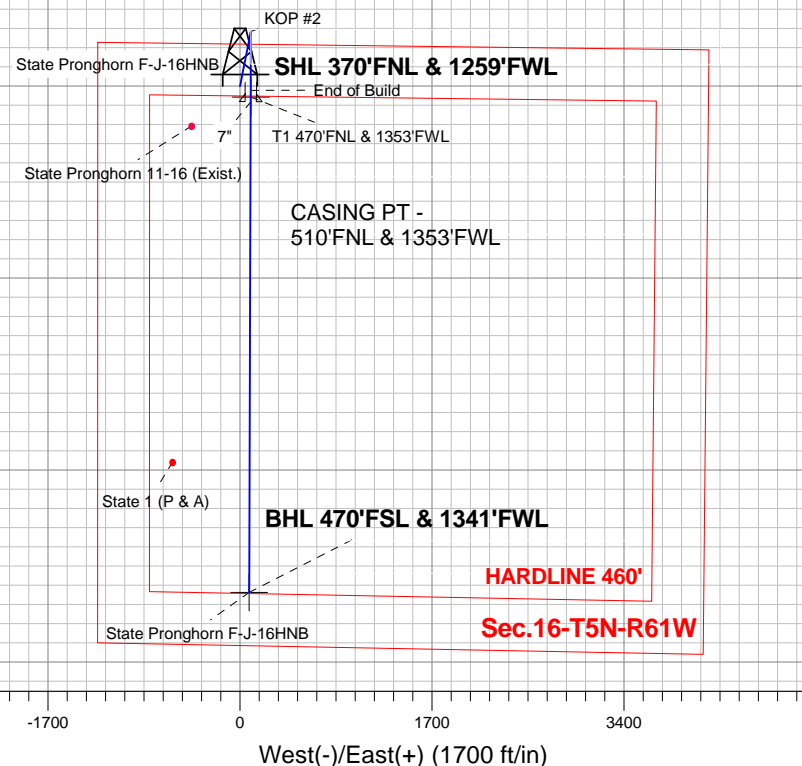
Magnetic Field
Strength: 53036.4nT
Dip Angle: 67.09°
Date: 12/12/2012
Model: IGRF2010

Pronghorn F-16 Pad Sec.16-T5N-R61W
State Pronghorn F-J-16HNB
Plan #1 (12-12-12)
13:32, December 12 2012

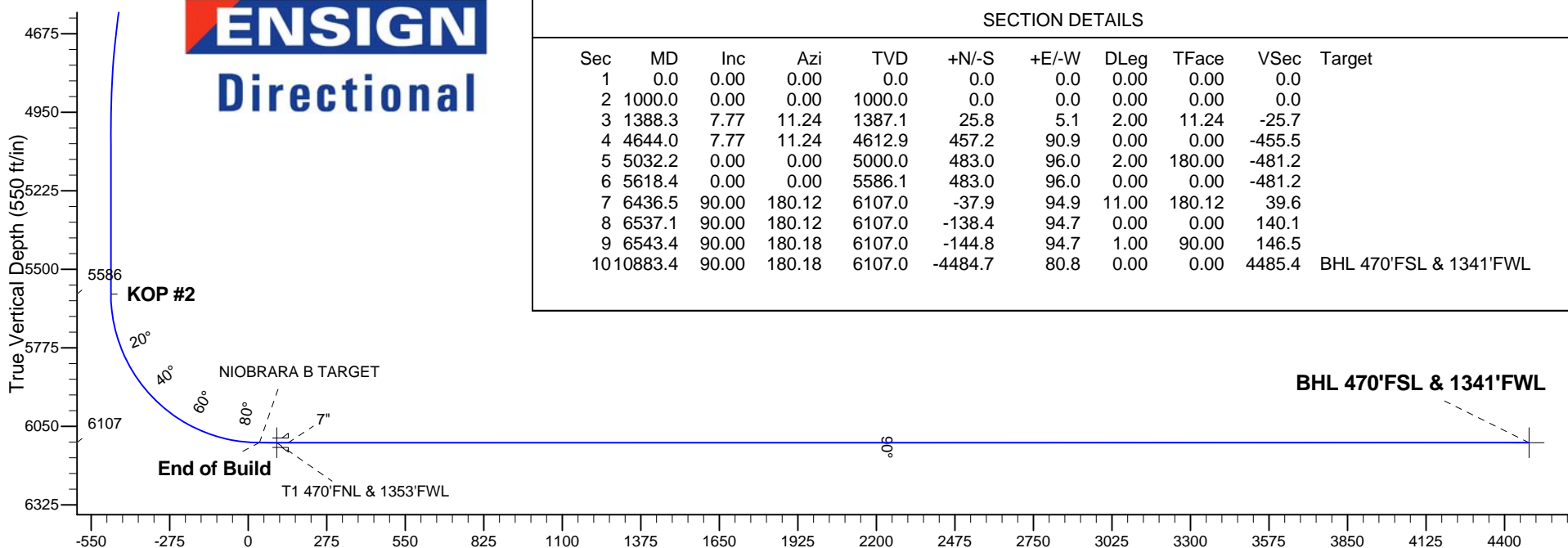
ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
5586.2	5618.4	KOP #2
6107.0	6436.5	End of Build

South(-)/North(+) (1700 ft/in)



ENSIGN
Directional



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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1388.3	7.77	11.24	1387.1	25.8	5.1	2.00	11.24	-25.7	
4	4644.0	7.77	11.24	4612.9	457.2	90.9	0.00	0.00	-455.5	
5	5032.2	0.00	0.00	5000.0	483.0	96.0	2.00	180.00	-481.2	
6	5618.4	0.00	0.00	5586.1	483.0	96.0	0.00	0.00	-481.2	
7	6436.5	90.00	180.12	6107.0	-37.9	94.9	11.00	180.12	39.6	
8	6537.1	90.00	180.12	6107.0	-138.4	94.7	0.00	0.00	140.1	
9	6543.4	90.00	180.18	6107.0	-144.8	94.7	1.00	90.00	146.5	
10	10883.4	90.00	180.18	6107.0	-4484.7	80.8	0.00	0.00	4485.4	BHL 470'FSL & 1341'FWL

Vertical Section at 178.97° (550 ft/in)



BONANZA CREEK ENERGY OPERATING

SEC.16-T5N-R61W

Pronghorn F-16 Pad Sec.16-T5N-R61W

State Pronghorn F-J-16HNB

Wellbore #1

Plan: Plan #1 (12-12-12)

Standard Planning Report

12 December, 2012

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,388.3	7.77	11.24	1,387.1	25.8	5.1	2.00	2.00	0.00	11.24	
4,644.0	7.77	11.24	4,612.9	457.2	90.9	0.00	0.00	0.00	0.00	
5,032.2	0.00	0.00	5,000.0	483.0	96.0	2.00	-2.00	0.00	180.00	
5,618.4	0.00	0.00	5,586.1	483.0	96.0	0.00	0.00	0.00	0.00	
6,436.5	90.00	180.12	6,107.0	-37.9	94.9	11.00	11.00	0.00	180.12	
6,537.1	90.00	180.12	6,107.0	-138.4	94.7	0.00	0.00	0.00	0.00	
6,543.4	90.00	180.18	6,107.0	-144.8	94.7	1.00	0.00	1.00	90.00	
10,883.4	90.00	180.18	6,107.0	-4,484.7	80.8	0.00	0.00	0.00	0.00	BHL 470'FSL & 134

Database:	Landmark	Local Co-ordinate Reference:	Well State Pronghorn F-J-16HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
Project:	SEC.16-T5N-R61W	MD Reference:	WELL @ 4651.0ft (RKB - 13')
Site:	Pronghorn F-16 Pad Sec.16-T5N-R61W	North Reference:	True
Well:	State Pronghorn F-J-16HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-12-12)		

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
100.0	0.00	0.00	100.0	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
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,100.0	2.00	11.24	1,100.0	1.7	0.3	-1.7	2.00	2.00	0.00
1,200.0	4.00	11.24	1,199.8	6.8	1.4	-6.8	2.00	2.00	0.00
1,300.0	6.00	11.24	1,299.5	15.4	3.1	-15.3	2.00	2.00	0.00
1,388.3	7.77	11.24	1,387.1	25.8	5.1	-25.7	2.00	2.00	0.00
1,400.0	7.77	11.24	1,398.7	27.3	5.4	-27.2	0.00	0.00	0.00
1,500.0	7.77	11.24	1,497.8	40.6	8.1	-40.4	0.00	0.00	0.00
1,600.0	7.77	11.24	1,596.9	53.8	10.7	-53.6	0.00	0.00	0.00
1,700.0	7.77	11.24	1,696.0	67.1	13.3	-66.8	0.00	0.00	0.00
1,800.0	7.77	11.24	1,795.0	80.3	16.0	-80.0	0.00	0.00	0.00
1,900.0	7.77	11.24	1,894.1	93.6	18.6	-93.2	0.00	0.00	0.00
2,000.0	7.77	11.24	1,993.2	106.8	21.2	-106.4	0.00	0.00	0.00
2,100.0	7.77	11.24	2,092.3	120.1	23.9	-119.6	0.00	0.00	0.00
2,200.0	7.77	11.24	2,191.4	133.3	26.5	-132.8	0.00	0.00	0.00
2,300.0	7.77	11.24	2,290.5	146.6	29.1	-146.0	0.00	0.00	0.00
2,400.0	7.77	11.24	2,389.5	159.8	31.8	-159.3	0.00	0.00	0.00
2,500.0	7.77	11.24	2,488.6	173.1	34.4	-172.5	0.00	0.00	0.00
2,600.0	7.77	11.24	2,587.7	186.4	37.0	-185.7	0.00	0.00	0.00
2,700.0	7.77	11.24	2,686.8	199.6	39.7	-198.9	0.00	0.00	0.00
2,800.0	7.77	11.24	2,785.9	212.9	42.3	-212.1	0.00	0.00	0.00
2,900.0	7.77	11.24	2,884.9	226.1	44.9	-225.3	0.00	0.00	0.00
3,000.0	7.77	11.24	2,984.0	239.4	47.6	-238.5	0.00	0.00	0.00
3,100.0	7.77	11.24	3,083.1	252.6	50.2	-251.7	0.00	0.00	0.00
3,200.0	7.77	11.24	3,182.2	265.9	52.8	-264.9	0.00	0.00	0.00
3,300.0	7.77	11.24	3,281.3	279.1	55.5	-278.1	0.00	0.00	0.00
3,400.0	7.77	11.24	3,380.4	292.4	58.1	-291.3	0.00	0.00	0.00
3,500.0	7.77	11.24	3,479.4	305.6	60.7	-304.5	0.00	0.00	0.00
3,600.0	7.77	11.24	3,578.5	318.9	63.4	-317.7	0.00	0.00	0.00
3,700.0	7.77	11.24	3,677.6	332.1	66.0	-330.9	0.00	0.00	0.00
3,800.0	7.77	11.24	3,776.7	345.4	68.6	-344.1	0.00	0.00	0.00
3,900.0	7.77	11.24	3,875.8	358.6	71.3	-357.3	0.00	0.00	0.00
4,000.0	7.77	11.24	3,974.9	371.9	73.9	-370.5	0.00	0.00	0.00
4,100.0	7.77	11.24	4,073.9	385.1	76.6	-383.7	0.00	0.00	0.00
4,200.0	7.77	11.24	4,173.0	398.4	79.2	-396.9	0.00	0.00	0.00
4,300.0	7.77	11.24	4,272.1	411.6	81.8	-410.1	0.00	0.00	0.00
4,400.0	7.77	11.24	4,371.2	424.9	84.5	-423.3	0.00	0.00	0.00
4,500.0	7.77	11.24	4,470.3	438.2	87.1	-436.5	0.00	0.00	0.00
4,600.0	7.77	11.24	4,569.4	451.4	89.7	-449.7	0.00	0.00	0.00
4,644.0	7.77	11.24	4,612.9	457.2	90.9	-455.5	0.00	0.00	0.00
4,700.0	6.64	11.24	4,668.5	464.1	92.2	-462.4	2.00	-2.00	0.00
4,800.0	4.64	11.24	4,768.0	473.8	94.2	-472.0	2.00	-2.00	0.00
4,900.0	2.64	11.24	4,867.8	480.0	95.4	-478.2	2.00	-2.00	0.00
5,000.0	0.64	11.24	4,967.8	482.8	96.0	-481.0	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Pronghorn F-J-16HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
Project:	SEC.16-T5N-R61W	MD Reference:	WELL @ 4651.0ft (RKB - 13')
Site:	Pronghorn F-16 Pad Sec.16-T5N-R61W	North Reference:	True
Well:	State Pronghorn F-J-16HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-12-12)		

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)
5,032.2	0.00	0.00	5,000.0	483.0	96.0	-481.2	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,067.8	483.0	96.0	-481.2	0.00	0.00	0.00
5,200.0	0.00	0.00	5,167.8	483.0	96.0	-481.2	0.00	0.00	0.00
5,300.0	0.00	0.00	5,267.8	483.0	96.0	-481.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,367.8	483.0	96.0	-481.2	0.00	0.00	0.00
5,500.0	0.00	0.00	5,467.8	483.0	96.0	-481.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,567.8	483.0	96.0	-481.2	0.00	0.00	0.00
5,618.4	0.00	0.00	5,586.2	483.0	96.0	-481.2	0.00	0.00	0.00
KOP #2									
5,700.0	8.98	180.12	5,667.4	476.6	96.0	-474.8	11.01	11.01	0.00
5,800.0	19.98	180.12	5,764.1	451.6	95.9	-449.8	11.00	11.00	0.00
5,900.0	30.98	180.12	5,854.2	408.7	95.8	-406.9	11.00	11.00	0.00
6,000.0	41.98	180.12	5,934.5	349.3	95.7	-347.6	11.00	11.00	0.00
6,100.0	52.98	180.12	6,002.0	275.7	95.6	-274.0	11.00	11.00	0.00
6,200.0	63.98	180.12	6,054.2	190.6	95.4	-188.9	11.00	11.00	0.00
6,300.0	74.98	180.12	6,089.2	97.1	95.2	-95.4	11.00	11.00	0.00
6,400.0	85.98	180.12	6,105.7	-1.4	95.0	3.1	11.00	11.00	0.00
6,436.5	90.00	180.12	6,107.0	-37.9	94.9	39.6	11.00	11.00	0.00
End of Build - NIOBRARA B TARGET									
6,497.0	90.00	180.12	6,107.0	-98.4	94.8	100.0	0.00	0.00	0.00
T1 470'FNL & 1353'FWL									
6,500.0	90.00	180.12	6,107.0	-101.3	94.8	103.0	0.00	0.00	0.00
6,537.1	90.00	180.12	6,107.0	-138.4	94.7	140.1	0.00	0.00	0.00
7"									
6,543.4	90.00	180.18	6,107.0	-144.8	94.7	146.5	1.00	0.00	1.00
6,600.0	90.00	180.18	6,107.0	-201.3	94.5	203.0	0.00	0.00	0.00
6,700.0	90.00	180.18	6,107.0	-301.3	94.2	303.0	0.00	0.00	0.00
6,800.0	90.00	180.18	6,107.0	-401.3	93.9	403.0	0.00	0.00	0.00
6,900.0	90.00	180.18	6,107.0	-501.3	93.5	502.9	0.00	0.00	0.00
7,000.0	90.00	180.18	6,107.0	-601.3	93.2	602.9	0.00	0.00	0.00
7,100.0	90.00	180.18	6,107.0	-701.3	92.9	702.9	0.00	0.00	0.00
7,200.0	90.00	180.18	6,107.0	-801.3	92.6	802.9	0.00	0.00	0.00
7,300.0	90.00	180.18	6,107.0	-901.3	92.3	902.8	0.00	0.00	0.00
7,400.0	90.00	180.18	6,107.0	-1,001.3	91.9	1,002.8	0.00	0.00	0.00
7,500.0	90.00	180.18	6,107.0	-1,101.3	91.6	1,102.8	0.00	0.00	0.00
7,600.0	90.00	180.18	6,107.0	-1,201.3	91.3	1,202.8	0.00	0.00	0.00
7,700.0	90.00	180.18	6,107.0	-1,301.3	91.0	1,302.7	0.00	0.00	0.00
7,800.0	90.00	180.18	6,107.0	-1,401.3	90.7	1,402.7	0.00	0.00	0.00
7,900.0	90.00	180.18	6,107.0	-1,501.3	90.3	1,502.7	0.00	0.00	0.00
8,000.0	90.00	180.18	6,107.0	-1,601.3	90.0	1,602.7	0.00	0.00	0.00
8,100.0	90.00	180.18	6,107.0	-1,701.3	89.7	1,702.7	0.00	0.00	0.00
8,200.0	90.00	180.18	6,107.0	-1,801.3	89.4	1,802.6	0.00	0.00	0.00
8,300.0	90.00	180.18	6,107.0	-1,901.3	89.1	1,902.6	0.00	0.00	0.00
8,400.0	90.00	180.18	6,107.0	-2,001.3	88.7	2,002.6	0.00	0.00	0.00
8,500.0	90.00	180.18	6,107.0	-2,101.3	88.4	2,102.6	0.00	0.00	0.00
8,600.0	90.00	180.18	6,107.0	-2,201.3	88.1	2,202.5	0.00	0.00	0.00
8,700.0	90.00	180.18	6,107.0	-2,301.3	87.8	2,302.5	0.00	0.00	0.00
8,800.0	90.00	180.18	6,107.0	-2,401.3	87.5	2,402.5	0.00	0.00	0.00
8,900.0	90.00	180.18	6,107.0	-2,501.3	87.1	2,502.5	0.00	0.00	0.00
9,000.0	90.00	180.18	6,107.0	-2,601.3	86.8	2,602.5	0.00	0.00	0.00
9,100.0	90.00	180.18	6,107.0	-2,701.3	86.5	2,702.4	0.00	0.00	0.00
9,200.0	90.00	180.18	6,107.0	-2,801.3	86.2	2,802.4	0.00	0.00	0.00
9,300.0	90.00	180.18	6,107.0	-2,901.3	85.9	2,902.4	0.00	0.00	0.00

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	6,436.5	6,107.0	NIORARA B TARGET		0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well State Pronghorn F-J-16HNB
Company:	BONANZA CREEK ENERGY OPERATING	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
Project:	SEC.16-T5N-R61W	MD Reference:	WELL @ 4651.0ft (RKB - 13')
Site:	Pronghorn F-16 Pad Sec.16-T5N-R61W	North Reference:	True
Well:	State Pronghorn F-J-16HNB	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (12-12-12)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
5,618.4	5,586.2	483.0	96.0	KOP #2
6,436.5	6,107.0	-37.8	94.9	End of Build



BONANZA CREEK ENERGY OPERATING

SEC.16-T5N-R61W

Pronghorn F-16 Pad Sec.16-T5N-R61W

State Pronghorn F-J-16HNB

Wellbore #1

Plan #1 (12-12-12)

Anticollision Report

12 December, 2012

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn F-J-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
Reference Site:	Pronghorn F-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4651.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn F-J-16HNB	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 #1 (12-12-12)	Offset TVD Reference:	Offset Datum

Offset Design		Pronghorn P-17 Pad Sec.17-T5N-R61W - State 1 (P & A) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program: 6100-UNKNOWN														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				
2,300.0	2,290.5	2,273.5	2,273.5	5.7	45.5	178.94	-3,329.8	-596.1	3,532.2	3,482.0	50.19	70.378				
2,400.0	2,389.5	2,372.5	2,372.5	6.0	47.5	178.95	-3,329.8	-596.1	3,545.7	3,493.3	52.39	67.677				
2,500.0	2,488.6	2,471.6	2,471.6	6.3	49.4	178.95	-3,329.8	-596.1	3,559.2	3,504.6	54.59	65.193				
2,600.0	2,587.7	2,570.7	2,570.7	6.6	51.4	178.96	-3,329.8	-596.1	3,572.7	3,515.9	56.80	62.902				
2,700.0	2,686.8	2,669.8	2,669.8	7.0	53.4	178.96	-3,329.8	-596.1	3,586.2	3,527.2	59.00	60.781				
2,800.0	2,785.9	2,768.9	2,768.9	7.3	55.4	178.96	-3,329.8	-596.1	3,599.7	3,538.5	61.21	58.813				
2,900.0	2,884.9	2,867.9	2,867.9	7.6	57.4	178.97	-3,329.8	-596.1	3,613.2	3,549.8	63.41	56.981				
3,000.0	2,984.0	2,967.0	2,967.0	7.9	59.3	178.97	-3,329.8	-596.1	3,626.7	3,561.1	65.62	55.272				
3,100.0	3,083.1	3,066.1	3,066.1	8.2	61.3	178.98	-3,329.8	-596.1	3,640.2	3,572.4	67.82	53.674				
3,200.0	3,182.2	3,165.2	3,165.2	8.6	63.3	178.98	-3,329.8	-596.1	3,653.8	3,583.7	70.03	52.177				
3,300.0	3,281.3	3,264.3	3,264.3	8.9	65.3	178.98	-3,329.8	-596.1	3,667.3	3,595.0	72.23	50.771				
3,400.0	3,380.4	3,363.4	3,363.4	9.2	67.3	178.99	-3,329.8	-596.1	3,680.8	3,606.3	74.44	49.448				
3,500.0	3,479.4	3,462.4	3,462.4	9.5	69.2	178.99	-3,329.8	-596.1	3,694.3	3,617.6	76.64	48.201				
3,600.0	3,578.5	3,561.5	3,561.5	9.9	71.2	178.99	-3,329.8	-596.1	3,707.8	3,628.9	78.85	47.024				
3,700.0	3,677.6	3,660.6	3,660.6	10.2	73.2	179.00	-3,329.8	-596.1	3,721.3	3,640.3	81.06	45.911				
3,800.0	3,776.7	3,759.7	3,759.7	10.5	75.2	179.00	-3,329.8	-596.1	3,734.8	3,651.6	83.26	44.857				
3,900.0	3,875.8	3,858.8	3,858.8	10.8	77.2	179.00	-3,329.8	-596.1	3,748.3	3,662.9	85.47	43.857				
4,000.0	3,974.9	3,957.9	3,957.9	11.2	79.2	179.01	-3,329.8	-596.1	3,761.8	3,674.2	87.67	42.907				
4,100.0	4,073.9	4,056.9	4,056.9	11.5	81.1	179.01	-3,329.8	-596.1	3,775.3	3,685.5	89.88	42.004				
4,200.0	4,173.0	4,156.0	4,156.0	11.8	83.1	179.02	-3,329.8	-596.1	3,788.9	3,696.8	92.09	41.145				
4,300.0	4,272.1	4,255.1	4,255.1	12.2	85.1	179.02	-3,329.8	-596.1	3,802.4	3,708.1	94.29	40.325				
4,400.0	4,371.2	4,354.2	4,354.2	12.5	87.1	179.02	-3,329.8	-596.1	3,815.9	3,719.4	96.50	39.543				
4,500.0	4,470.3	4,453.3	4,453.3	12.8	89.1	179.03	-3,329.8	-596.1	3,829.4	3,730.7	98.71	38.796				
4,600.0	4,569.4	4,552.4	4,552.4	13.1	91.0	179.03	-3,329.8	-596.1	3,842.9	3,742.0	100.91	38.081				
4,644.0	4,612.9	4,595.9	4,595.9	13.3	91.9	179.03	-3,329.8	-596.1	3,848.8	3,747.0	101.88	37.777				
4,700.0	4,668.5	4,651.5	4,651.5	13.5	93.0	179.03	-3,329.8	-596.1	3,855.9	3,752.5	103.34	37.313				
4,800.0	4,768.0	4,751.0	4,751.0	13.7	95.0	179.04	-3,329.8	-596.1	3,865.7	3,759.9	105.82	36.531				
4,900.0	4,867.8	4,850.8	4,850.8	13.9	97.0	179.04	-3,329.8	-596.1	3,872.1	3,763.9	108.19	35.791				
5,000.0	4,967.8	4,950.8	4,950.8	14.0	99.0	179.05	-3,329.8	-596.1	3,874.9	3,764.5	110.43	35.091				
5,032.2	5,000.0	4,983.0	4,983.0	14.1	99.7	-169.71	-3,329.8	-596.1	3,875.1	3,764.0	111.12	34.873				
5,100.0	5,067.8	5,050.8	5,050.8	14.2	101.0	-169.71	-3,329.8	-596.1	3,875.1	3,762.5	112.60	34.414				
5,200.0	5,167.8	5,150.8	5,150.8	14.4	103.0	-169.71	-3,329.8	-596.1	3,875.1	3,760.3	114.82	33.751				
5,300.0	5,267.8	5,250.8	5,250.8	14.5	105.0	-169.71	-3,329.8	-596.1	3,875.1	3,758.1	117.03	33.112				
5,400.0	5,367.8	5,350.8	5,350.8	14.7	107.0	-169.71	-3,329.8	-596.1	3,875.1	3,755.9	119.24	32.498				
5,500.0	5,467.8	5,450.8	5,450.8	14.9	109.0	-169.71	-3,329.8	-596.1	3,875.1	3,753.6	121.46	31.905				
5,600.0	5,567.8	5,550.8	5,550.8	15.1	111.0	-169.71	-3,329.8	-596.1	3,875.1	3,751.4	123.67	31.334				
5,618.4	5,586.1	5,569.1	5,569.1	15.1	111.4	-169.71	-3,329.8	-596.1	3,875.1	3,751.0	124.08	31.231				
5,650.0	5,617.7	5,600.7	5,600.7	15.1	112.0	10.19	-3,329.8	-596.1	3,874.2	3,749.7	124.49	31.120				
5,700.0	5,667.4	5,650.4	5,650.4	15.2	113.0	10.31	-3,329.8	-596.1	3,868.8	3,744.6	124.21	31.146				
5,750.0	5,716.4	5,699.4	5,699.4	15.1	114.0	10.54	-3,329.8	-596.1	3,858.8	3,736.0	122.81	31.422				
5,800.0	5,764.1	5,747.1	5,747.1	15.1	114.9	10.89	-3,329.8	-596.1	3,844.2	3,724.0	120.27	31.963				
5,850.0	5,810.2	5,793.2	5,793.2	15.0	115.9	11.38	-3,329.8	-596.1	3,825.2	3,708.6	116.64	32.795				
5,900.0	5,854.2	5,837.2	5,837.2	14.9	116.7	12.04	-3,329.8	-596.1	3,802.0	3,690.0	111.98	33.954				
5,950.0	5,895.8	5,878.8	5,878.8	14.8	117.6	12.91	-3,329.8	-596.1	3,774.7	3,668.3	106.39	35.480				
6,000.0	5,934.5	5,917.5	5,917.5	14.6	118.4	14.04	-3,329.8	-596.1	3,743.6	3,643.6	100.06	37.415				
6,050.0	5,970.0	5,953.0	5,953.0	14.5	119.1	15.52	-3,329.8	-596.1	3,709.0	3,615.8	93.27	39.765				
6,100.0	6,002.0	5,985.0	5,985.0	14.4	119.7	17.48	-3,329.8	-596.1	3,671.3	3,584.7	86.54	42.423				
6,150.0	6,030.2	6,013.2	6,013.2	14.3	120.3	20.15	-3,329.8	-596.1	3,630.7	3,550.0	80.72	44.977				
6,200.0	6,054.2	6,037.2	6,037.2	14.2	120.7	23.88	-3,329.8	-596.1	3,587.7	3,510.4	77.33	46.394				
6,250.0	6,074.0	6,057.0	6,057.0	14.1	121.1	29.31	-3,329.8	-596.1	3,542.6	3,463.9	78.75	44.984				
6,300.0	6,089.2	6,072.2	6,072.2	14.1	121.4	37.59	-3,329.8	-596.1	3,495.9	3,408.0	87.96	39.746				
6,350.0	6,099.8	6,082.8	6,082.8	14.2	121.7	50.75	-3,329.8	-596.1	3,448.1	3,341.5	106.56	32.357				

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 State Pronghorn F-J-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
Reference Site:	Pronghorn F-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4651.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn F-J-16HNB	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 #1 (12-12-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 6100-UNKNOWN													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		
6,400.0	6,105.7	6,088.7	6,088.7	14.3	121.8	71.16	-3,329.8	-596.1	3,399.4	3,270.6	128.87	26.378		
6,436.5	6,107.0	6,090.0	6,090.0	14.4	121.8	90.00	-3,329.8	-596.1	3,363.7	3,227.4	136.23	24.692		
6,500.0	6,107.0	6,090.0	6,090.0	14.7	121.8	90.00	-3,329.8	-596.1	3,301.6	3,165.0	136.52	24.183		
6,537.1	6,107.0	6,090.0	6,090.0	14.9	121.8	90.00	-3,329.8	-596.1	3,265.3	3,128.6	136.74	23.880		
6,543.4	6,107.0	6,090.0	6,090.0	15.0	121.8	90.00	-3,329.8	-596.1	3,259.1	3,122.3	136.77	23.829		
6,600.0	6,107.0	6,090.0	6,090.0	15.3	121.8	90.00	-3,329.8	-596.1	3,203.8	3,066.7	137.07	23.373		
6,700.0	6,107.0	6,090.0	6,090.0	16.1	121.8	90.00	-3,329.8	-596.1	3,106.1	2,968.2	137.92	22.521		
6,800.0	6,107.0	6,090.0	6,090.0	17.2	121.8	90.00	-3,329.8	-596.1	3,008.7	2,869.7	138.94	21.654		
6,900.0	6,107.0	6,090.0	6,090.0	18.3	121.8	90.00	-3,329.8	-596.1	2,911.3	2,771.2	140.11	20.779		
7,000.0	6,107.0	6,090.0	6,090.0	19.6	121.8	90.00	-3,329.8	-596.1	2,814.2	2,672.8	141.40	19.903		
7,100.0	6,107.0	6,090.0	6,090.0	21.0	121.8	90.00	-3,329.8	-596.1	2,717.3	2,574.5	142.78	19.031		
7,200.0	6,107.0	6,090.0	6,090.0	22.5	121.8	90.00	-3,329.8	-596.1	2,620.6	2,476.3	144.24	18.168		
7,300.0	6,107.0	6,090.0	6,090.0	24.0	121.8	90.00	-3,329.8	-596.1	2,524.1	2,378.4	145.77	17.316		
7,400.0	6,107.0	6,090.0	6,090.0	25.6	121.8	90.00	-3,329.8	-596.1	2,428.0	2,280.6	147.35	16.478		
7,500.0	6,107.0	6,090.0	6,090.0	27.2	121.8	90.00	-3,329.8	-596.1	2,332.2	2,183.2	148.98	15.655		
7,600.0	6,107.0	6,090.0	6,090.0	28.9	121.8	90.00	-3,329.8	-596.1	2,236.7	2,086.1	150.64	14.848		
7,700.0	6,107.0	6,090.0	6,090.0	30.6	121.8	90.00	-3,329.8	-596.1	2,141.7	1,989.3	152.33	14.060		
7,800.0	6,107.0	6,090.0	6,090.0	32.3	121.8	90.00	-3,329.8	-596.1	2,047.1	1,893.1	154.05	13.289		
7,900.0	6,107.0	6,090.0	6,090.0	34.0	121.8	90.00	-3,329.8	-596.1	1,953.1	1,797.3	155.79	12.537		
8,000.0	6,107.0	6,090.0	6,090.0	35.8	121.8	90.00	-3,329.8	-596.1	1,859.7	1,702.1	157.54	11.804		
8,100.0	6,107.0	6,090.0	6,090.0	37.5	121.8	90.00	-3,329.8	-596.1	1,767.0	1,607.7	159.32	11.091		
8,200.0	6,107.0	6,090.0	6,090.0	39.3	121.8	90.00	-3,329.8	-596.1	1,675.1	1,514.0	161.10	10.398		
8,300.0	6,107.0	6,090.0	6,090.0	41.1	121.8	90.00	-3,329.8	-596.1	1,584.3	1,421.4	162.90	9.725		
8,400.0	6,107.0	6,090.0	6,090.0	42.9	121.8	90.00	-3,329.8	-596.1	1,494.6	1,329.9	164.71	9.074		
8,500.0	6,107.0	6,090.0	6,090.0	44.8	121.8	90.00	-3,329.8	-596.1	1,406.3	1,239.8	166.53	8.445		
8,600.0	6,107.0	6,090.0	6,090.0	46.6	121.8	90.00	-3,329.8	-596.1	1,319.7	1,151.3	168.36	7.838		
8,700.0	6,107.0	6,090.0	6,090.0	48.4	121.8	90.00	-3,329.8	-596.1	1,235.1	1,064.9	170.20	7.257		
8,800.0	6,107.0	6,090.0	6,090.0	50.3	121.8	90.00	-3,329.8	-596.1	1,152.9	980.9	172.04	6.702		
8,900.0	6,107.0	6,090.0	6,090.0	52.1	121.8	90.00	-3,329.8	-596.1	1,073.8	900.0	173.88	6.176		
9,000.0	6,107.0	6,090.0	6,090.0	54.0	121.8	90.00	-3,329.8	-596.1	998.5	822.8	175.74	5.682		
9,100.0	6,107.0	6,090.0	6,090.0	55.8	121.8	90.00	-3,329.8	-596.1	927.8	750.2	177.59	5.225		
9,200.0	6,107.0	6,090.0	6,090.0	57.7	121.8	90.00	-3,329.8	-596.1	863.0	683.5	179.45	4.809		
9,300.0	6,107.0	6,090.0	6,090.0	59.5	121.8	90.00	-3,329.8	-596.1	805.4	624.0	181.32	4.442		
9,400.0	6,107.0	6,090.0	6,090.0	61.4	121.8	90.00	-3,329.8	-596.1	756.6	573.4	183.19	4.130		
9,500.0	6,107.0	6,090.0	6,090.0	63.3	121.8	90.00	-3,329.8	-596.1	718.6	533.5	185.06	3.883		
9,600.0	6,107.0	6,090.0	6,090.0	65.1	121.8	90.00	-3,329.8	-596.1	693.0	506.0	186.93	3.707		
9,700.0	6,107.0	6,090.0	6,090.0	67.0	121.8	90.00	-3,329.8	-596.1	681.2	492.4	188.81	3.608		
9,730.7	6,107.0	6,090.0	6,090.0	67.6	121.8	90.00	-3,329.8	-596.1	680.5	491.1	189.38	3.593 CC, ES		
9,800.0	6,107.0	6,090.0	6,090.0	68.9	121.8	90.00	-3,329.8	-596.1	684.0	493.4	190.69	3.587 SF		
9,900.0	6,107.0	6,090.0	6,090.0	70.8	121.8	90.00	-3,329.8	-596.1	701.3	508.7	192.57	3.642		
10,000.0	6,107.0	6,090.0	6,090.0	72.7	121.8	90.00	-3,329.8	-596.1	731.9	537.4	194.45	3.764		
10,100.0	6,107.0	6,090.0	6,090.0	74.5	121.8	90.00	-3,329.8	-596.1	774.3	577.9	196.34	3.944		
10,200.0	6,107.0	6,090.0	6,090.0	76.4	121.8	90.00	-3,329.8	-596.1	826.7	628.4	198.22	4.170		
10,300.0	6,107.0	6,090.0	6,090.0	78.3	121.8	90.00	-3,329.8	-596.1	887.3	687.2	200.11	4.434		
10,400.0	6,107.0	6,090.0	6,090.0	80.2	121.8	90.00	-3,329.8	-596.1	954.5	752.5	202.00	4.725		
10,500.0	6,107.0	6,090.0	6,090.0	82.1	121.8	90.00	-3,329.8	-596.1	1,027.1	823.2	203.90	5.037		
10,600.0	6,107.0	6,090.0	6,090.0	84.0	121.8	90.00	-3,329.8	-596.1	1,104.0	898.2	205.79	5.365		
10,700.0	6,107.0	6,090.0	6,090.0	85.9	121.8	90.00	-3,329.8	-596.1	1,184.4	976.7	207.68	5.703		
10,800.0	6,107.0	6,090.0	6,090.0	87.8	121.8	90.00	-3,329.8	-596.1	1,267.5	1,057.9	209.58	6.048		
10,883.4	6,107.0	6,090.0	6,090.0	89.4	121.8	90.00	-3,329.8	-596.1	1,338.6	1,127.4	211.16	6.339		

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn F-J-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
Reference Site:	Pronghorn F-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4651.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn F-J-16HNB	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 #1 (12-12-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 6100-UNKNOWN													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	-129.49	-353.4	-428.9	556.0					
100.0	100.0	83.0	83.0	0.1	1.7	-129.49	-353.4	-428.9	555.7	553.9	1.77	313.507		
200.0	200.0	183.0	183.0	0.3	3.7	-129.49	-353.4	-428.9	555.7	551.7	4.00	139.021		
300.0	300.0	283.0	283.0	0.6	5.7	-129.49	-353.4	-428.9	555.7	549.5	6.22	89.313		
400.0	400.0	383.0	383.0	0.8	7.7	-129.49	-353.4	-428.9	555.7	547.3	8.45	65.790		
500.0	500.0	483.0	483.0	1.0	9.7	-129.49	-353.4	-428.9	555.7	545.0	10.67	52.074		
600.0	600.0	583.0	583.0	1.2	11.7	-129.49	-353.4	-428.9	555.7	542.8	12.90	43.091		
700.0	700.0	683.0	683.0	1.5	13.7	-129.49	-353.4	-428.9	555.7	540.6	15.12	36.751		
800.0	800.0	783.0	783.0	1.7	15.7	-129.49	-353.4	-428.9	555.7	538.4	17.35	32.037		
900.0	900.0	883.0	883.0	1.9	17.7	-129.49	-353.4	-428.9	555.7	536.1	19.57	28.395		
1,000.0	1,000.0	983.0	983.0	2.1	19.7	-129.49	-353.4	-428.9	555.7	533.9	21.80	25.497		
1,100.0	1,100.0	1,083.0	1,083.0	2.4	21.7	-140.83	-353.4	-428.9	557.1	533.1	24.01	23.201		
1,200.0	1,199.8	1,182.8	1,182.8	2.6	23.7	-141.11	-353.4	-428.9	561.1	534.9	26.20	21.415		
1,300.0	1,299.5	1,282.5	1,282.5	2.8	25.6	-141.58	-353.4	-428.9	568.0	539.6	28.37	20.022		
1,388.3	1,387.1	1,370.1	1,370.1	3.0	27.4	-142.13	-353.4	-428.9	576.3	546.0	30.25	19.051		
1,400.0	1,398.7	1,381.7	1,381.7	3.1	27.6	-142.22	-353.4	-428.9	577.6	547.0	30.51	18.931		
1,500.0	1,497.8	1,480.8	1,480.8	3.3	29.6	-143.03	-353.4	-428.9	588.3	555.6	32.71	17.984		
1,600.0	1,596.9	1,579.9	1,579.9	3.6	31.6	-143.80	-353.4	-428.9	599.2	564.3	34.93	17.157		
1,700.0	1,696.0	1,679.0	1,679.0	3.9	33.6	-144.55	-353.4	-428.9	610.2	573.1	37.14	16.430		
1,800.0	1,795.0	1,778.0	1,778.0	4.2	35.6	-145.27	-353.4	-428.9	621.3	581.9	39.36	15.786		
1,900.0	1,894.1	1,877.1	1,877.1	4.5	37.5	-145.96	-353.4	-428.9	632.5	590.9	41.57	15.213		
2,000.0	1,993.2	1,976.2	1,976.2	4.8	39.5	-146.64	-353.4	-428.9	643.7	600.0	43.79	14.700		
2,100.0	2,092.3	2,075.3	2,075.3	5.1	41.5	-147.28	-353.4	-428.9	655.1	609.1	46.01	14.238		
2,200.0	2,191.4	2,174.4	2,174.4	5.4	43.5	-147.91	-353.4	-428.9	666.5	618.3	48.23	13.820		
2,300.0	2,290.5	2,273.5	2,273.5	5.7	45.5	-148.51	-353.4	-428.9	678.1	627.6	50.45	13.440		
2,400.0	2,389.5	2,372.5	2,372.5	6.0	47.5	-149.10	-353.4	-428.9	689.6	637.0	52.67	13.094		
2,500.0	2,488.6	2,471.6	2,471.6	6.3	49.4	-149.67	-353.4	-428.9	701.3	646.4	54.89	12.777		
2,600.0	2,587.7	2,570.7	2,570.7	6.6	51.4	-150.21	-353.4	-428.9	713.0	655.9	57.11	12.485		
2,700.0	2,686.8	2,669.8	2,669.8	7.0	53.4	-150.74	-353.4	-428.9	724.8	665.5	59.33	12.217		
2,800.0	2,785.9	2,768.9	2,768.9	7.3	55.4	-151.25	-353.4	-428.9	736.6	675.1	61.54	11.969		
2,900.0	2,884.9	2,867.9	2,867.9	7.6	57.4	-151.75	-353.4	-428.9	748.5	684.8	63.76	11.740		
3,000.0	2,984.0	2,967.0	2,967.0	7.9	59.3	-152.23	-353.4	-428.9	760.5	694.5	65.98	11.527		
3,100.0	3,083.1	3,066.1	3,066.1	8.2	61.3	-152.70	-353.4	-428.9	772.5	704.3	68.19	11.328		
3,200.0	3,182.2	3,165.2	3,165.2	8.6	63.3	-153.15	-353.4	-428.9	784.6	714.2	70.41	11.143		
3,300.0	3,281.3	3,264.3	3,264.3	8.9	65.3	-153.59	-353.4	-428.9	796.7	724.0	72.63	10.969		
3,400.0	3,380.4	3,363.4	3,363.4	9.2	67.3	-154.01	-353.4	-428.9	808.8	734.0	74.84	10.807		
3,500.0	3,479.4	3,462.4	3,462.4	9.5	69.2	-154.43	-353.4	-428.9	821.0	743.9	77.05	10.655		
3,600.0	3,578.5	3,561.5	3,561.5	9.9	71.2	-154.83	-353.4	-428.9	833.2	754.0	79.27	10.511		
3,700.0	3,677.6	3,660.6	3,660.6	10.2	73.2	-155.21	-353.4	-428.9	845.5	764.0	81.48	10.377		
3,800.0	3,776.7	3,759.7	3,759.7	10.5	75.2	-155.59	-353.4	-428.9	857.8	774.1	83.69	10.249		
3,900.0	3,875.8	3,858.8	3,858.8	10.8	77.2	-155.96	-353.4	-428.9	870.1	784.2	85.91	10.129		
4,000.0	3,974.9	3,957.9	3,957.9	11.2	79.2	-156.32	-353.4	-428.9	882.5	794.4	88.12	10.015		
4,100.0	4,073.9	4,056.9	4,056.9	11.5	81.1	-156.66	-353.4	-428.9	894.9	804.6	90.33	9.907		
4,200.0	4,173.0	4,156.0	4,156.0	11.8	83.1	-157.00	-353.4	-428.9	907.4	814.8	92.54	9.805		
4,300.0	4,272.1	4,255.1	4,255.1	12.2	85.1	-157.33	-353.4	-428.9	919.8	825.1	94.75	9.708		
4,400.0	4,371.2	4,354.2	4,354.2	12.5	87.1	-157.65	-353.4	-428.9	932.3	835.4	96.96	9.615		
4,500.0	4,470.3	4,453.3	4,453.3	12.8	89.1	-157.96	-353.4	-428.9	944.9	845.7	99.17	9.527		
4,600.0	4,569.4	4,552.4	4,552.4	13.1	91.0	-158.26	-353.4	-428.9	957.4	856.0	101.38	9.443		
4,644.0	4,612.9	4,595.9	4,595.9	13.3	91.9	-158.39	-353.4	-428.9	962.9	860.6	102.36	9.408		
4,700.0	4,668.5	4,651.5	4,651.5	13.5	93.0	-158.59	-353.4	-428.9	969.5	865.7	103.78	9.342		
4,800.0	4,768.0	4,751.0	4,751.0	13.7	95.0	-158.87	-353.4	-428.9	978.7	872.4	106.22	9.214		
4,900.0	4,867.8	4,850.8	4,850.8	13.9	97.0	-159.05	-353.4	-428.9	984.6	876.0	108.56	9.070		

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 State Pronghorn F-J-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
Reference Site:	Pronghorn F-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4651.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn F-J-16HNB	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 #1 (12-12-12)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 6100-UNKNOWN												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
5,000.0	4,967.8	4,950.8	4,950.8	14.0	99.0	-159.13	-353.4	-428.9	987.3	876.5	110.78	8.912	
5,032.2	5,000.0	4,983.0	4,983.0	14.1	99.7	-147.89	-353.4	-428.9	987.4	876.0	111.47	8.858	
5,100.0	5,067.8	5,050.8	5,050.8	14.2	101.0	-147.89	-353.4	-428.9	987.4	874.5	112.95	8.742	
5,200.0	5,167.8	5,150.8	5,150.8	14.4	103.0	-147.89	-353.4	-428.9	987.4	872.3	115.16	8.575	
5,300.0	5,267.8	5,250.8	5,250.8	14.5	105.0	-147.89	-353.4	-428.9	987.4	870.1	117.36	8.413	
5,400.0	5,367.8	5,350.8	5,350.8	14.7	107.0	-147.89	-353.4	-428.9	987.4	867.9	119.57	8.258	
5,500.0	5,467.8	5,450.8	5,450.8	14.9	109.0	-147.89	-353.4	-428.9	987.4	865.7	121.78	8.108	
5,600.0	5,567.8	5,550.8	5,550.8	15.1	111.0	-147.89	-353.4	-428.9	987.4	863.5	123.99	7.964	
5,618.4	5,586.1	5,569.1	5,569.1	15.1	111.4	-147.89	-353.4	-428.9	987.4	863.0	124.39	7.938	
5,650.0	5,617.7	5,600.7	5,600.7	15.1	112.0	32.07	-353.4	-428.9	986.6	861.7	124.88	7.901	
5,700.0	5,667.4	5,650.4	5,650.4	15.2	113.0	32.51	-353.4	-428.9	982.0	857.1	124.97	7.858	
5,750.0	5,716.4	5,699.4	5,699.4	15.1	114.0	33.35	-353.4	-428.9	973.4	849.2	124.28	7.832	
5,800.0	5,764.1	5,747.1	5,747.1	15.1	114.9	34.63	-353.4	-428.9	961.0	838.1	122.94	7.817	
5,850.0	5,810.2	5,793.2	5,793.2	15.0	115.9	36.37	-353.4	-428.9	944.9	823.7	121.13	7.800	
5,900.0	5,854.2	5,837.2	5,837.2	14.9	116.7	38.64	-353.4	-428.9	925.3	806.1	119.15	7.766	
5,950.0	5,895.8	5,878.8	5,878.8	14.8	117.6	41.50	-353.4	-428.9	902.5	785.1	117.39	7.688	
6,000.0	5,934.5	5,917.5	5,917.5	14.6	118.4	45.00	-353.4	-428.9	876.9	760.6	116.33	7.538	
6,050.0	5,970.0	5,953.0	5,953.0	14.5	119.1	49.18	-353.4	-428.9	849.0	732.5	116.45	7.290	
6,100.0	6,002.0	5,985.0	5,985.0	14.4	119.7	54.05	-353.4	-428.9	819.1	701.0	118.05	6.938	
6,150.0	6,030.2	6,013.2	6,013.2	14.3	120.3	59.52	-353.4	-428.9	787.7	666.6	121.07	6.506	
6,200.0	6,054.2	6,037.2	6,037.2	14.2	120.7	65.43	-353.4	-428.9	755.5	630.5	125.02	6.043	
6,250.0	6,074.0	6,057.0	6,057.0	14.1	121.1	71.51	-353.4	-428.9	723.1	594.0	129.08	5.602	
6,300.0	6,089.2	6,072.2	6,072.2	14.1	121.4	77.39	-353.4	-428.9	691.1	558.6	132.47	5.217	
6,350.0	6,099.8	6,082.8	6,082.8	14.2	121.7	82.74	-353.4	-428.9	660.2	525.5	134.75	4.900	
6,400.0	6,105.7	6,088.7	6,088.7	14.3	121.8	87.29	-353.4	-428.9	631.2	495.2	135.91	4.644	
6,436.5	6,107.0	6,090.0	6,090.0	14.4	121.8	90.00	-353.4	-428.9	611.5	475.3	136.23	4.489	
6,500.0	6,107.0	6,090.0	6,090.0	14.7	121.8	90.00	-353.4	-428.9	581.2	444.6	136.52	4.257	
6,537.1	6,107.0	6,090.0	6,090.0	14.9	121.8	90.00	-353.4	-428.9	566.0	429.3	136.74	4.139	
6,543.4	6,107.0	6,090.0	6,090.0	15.0	121.8	90.00	-353.4	-428.9	563.6	426.8	136.77	4.121	
6,600.0	6,107.0	6,090.0	6,090.0	15.3	121.8	90.00	-353.4	-428.9	545.0	408.0	137.07	3.976	
6,700.0	6,107.0	6,090.0	6,090.0	16.1	121.8	90.00	-353.4	-428.9	525.6	387.7	137.92	3.811	
6,753.7	6,107.0	6,090.0	6,090.0	16.7	121.8	90.00	-353.4	-428.9	522.9	384.4	138.47	3.776 CC, ES, SF	
6,800.0	6,107.0	6,090.0	6,090.0	17.2	121.8	90.00	-353.4	-428.9	524.9	386.0	138.94	3.778	
6,900.0	6,107.0	6,090.0	6,090.0	18.3	121.8	90.00	-353.4	-428.9	543.0	402.9	140.11	3.875	
7,000.0	6,107.0	6,090.0	6,090.0	19.6	121.8	90.00	-353.4	-428.9	578.0	436.6	141.40	4.088	
7,100.0	6,107.0	6,090.0	6,090.0	21.0	121.8	90.00	-353.4	-428.9	627.2	484.4	142.78	4.392	
7,200.0	6,107.0	6,090.0	6,090.0	22.5	121.8	90.00	-353.4	-428.9	687.4	543.2	144.24	4.766	
7,300.0	6,107.0	6,090.0	6,090.0	24.0	121.8	90.00	-353.4	-428.9	756.2	610.4	145.77	5.188	
7,400.0	6,107.0	6,090.0	6,090.0	25.6	121.8	90.00	-353.4	-428.9	831.3	684.0	147.35	5.642	
7,500.0	6,107.0	6,090.0	6,090.0	27.2	121.8	90.00	-353.4	-428.9	911.2	762.2	148.98	6.117	
7,600.0	6,107.0	6,090.0	6,090.0	28.9	121.8	90.00	-353.4	-428.9	994.8	844.1	150.64	6.604	
7,700.0	6,107.0	6,090.0	6,090.0	30.6	121.8	90.00	-353.4	-428.9	1,081.1	928.8	152.33	7.097	
7,800.0	6,107.0	6,090.0	6,090.0	32.3	121.8	90.00	-353.4	-428.9	1,169.7	1,015.6	154.05	7.593	
7,900.0	6,107.0	6,090.0	6,090.0	34.0	121.8	90.00	-353.4	-428.9	1,259.9	1,104.1	155.79	8.087	
8,000.0	6,107.0	6,090.0	6,090.0	35.8	121.8	90.00	-353.4	-428.9	1,351.5	1,194.0	157.54	8.579	
8,100.0	6,107.0	6,090.0	6,090.0	37.5	121.8	90.00	-353.4	-428.9	1,444.2	1,284.9	159.32	9.065	
8,200.0	6,107.0	6,090.0	6,090.0	39.3	121.8	90.00	-353.4	-428.9	1,537.9	1,376.8	161.10	9.546	
8,300.0	6,107.0	6,090.0	6,090.0	41.1	121.8	90.00	-353.4	-428.9	1,632.3	1,469.4	162.90	10.020	
8,400.0	6,107.0	6,090.0	6,090.0	42.9	121.8	90.00	-353.4	-428.9	1,727.3	1,562.6	164.71	10.487	
8,500.0	6,107.0	6,090.0	6,090.0	44.8	121.8	90.00	-353.4	-428.9	1,822.9	1,656.3	166.53	10.946	
8,600.0	6,107.0	6,090.0	6,090.0	46.6	121.8	90.00	-353.4	-428.9	1,918.9	1,750.5	168.36	11.397	
8,700.0	6,107.0	6,090.0	6,090.0	48.4	121.8	90.00	-353.4	-428.9	2,015.3	1,845.1	170.20	11.841	

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 State Pronghorn F-J-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
Reference Site:	Pronghorn F-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4651.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn F-J-16HNB	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 #1 (12-12-12)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 6100-UNKNOWN												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
8,800.0	6,107.0	6,090.0	6,090.0	50.3	121.8	90.00	-353.4	-428.9	2,112.0	1,940.0	172.04	12.277	
8,900.0	6,107.0	6,090.0	6,090.0	52.1	121.8	90.00	-353.4	-428.9	2,209.0	2,035.2	173.88	12.704	
9,000.0	6,107.0	6,090.0	6,090.0	54.0	121.8	90.00	-353.4	-428.9	2,306.3	2,130.6	175.74	13.124	
9,100.0	6,107.0	6,090.0	6,090.0	55.8	121.8	90.00	-353.4	-428.9	2,403.8	2,226.2	177.59	13.536	
9,200.0	6,107.0	6,090.0	6,090.0	57.7	121.8	90.00	-353.4	-428.9	2,501.5	2,322.1	179.45	13.940	
9,300.0	6,107.0	6,090.0	6,090.0	59.5	121.8	90.00	-353.4	-428.9	2,599.4	2,418.1	181.32	14.336	
9,400.0	6,107.0	6,090.0	6,090.0	61.4	121.8	90.00	-353.4	-428.9	2,697.4	2,514.2	183.19	14.725	
9,500.0	6,107.0	6,090.0	6,090.0	63.3	121.8	90.00	-353.4	-428.9	2,795.6	2,610.5	185.06	15.107	
9,600.0	6,107.0	6,090.0	6,090.0	65.1	121.8	90.00	-353.4	-428.9	2,893.9	2,707.0	186.93	15.481	
9,700.0	6,107.0	6,090.0	6,090.0	67.0	121.8	90.00	-353.4	-428.9	2,992.3	2,803.5	188.81	15.848	
9,800.0	6,107.0	6,090.0	6,090.0	68.9	121.8	90.00	-353.4	-428.9	3,090.8	2,900.1	190.69	16.209	
9,900.0	6,107.0	6,090.0	6,090.0	70.8	121.8	90.00	-353.4	-428.9	3,189.4	2,996.9	192.57	16.563	
10,000.0	6,107.0	6,090.0	6,090.0	72.7	121.8	90.00	-353.4	-428.9	3,288.1	3,093.7	194.45	16.910	
10,100.0	6,107.0	6,090.0	6,090.0	74.5	121.8	90.00	-353.4	-428.9	3,386.9	3,190.5	196.34	17.250	
10,200.0	6,107.0	6,090.0	6,090.0	76.4	121.8	90.00	-353.4	-428.9	3,485.7	3,287.5	198.22	17.585	
10,300.0	6,107.0	6,090.0	6,090.0	78.3	121.8	90.00	-353.4	-428.9	3,584.6	3,384.5	200.11	17.913	
10,400.0	6,107.0	6,090.0	6,090.0	80.2	121.8	90.00	-353.4	-428.9	3,683.6	3,481.6	202.00	18.235	
10,500.0	6,107.0	6,090.0	6,090.0	82.1	121.8	90.00	-353.4	-428.9	3,782.6	3,578.7	203.90	18.552	
10,600.0	6,107.0	6,090.0	6,090.0	84.0	121.8	90.00	-353.4	-428.9	3,881.6	3,675.9	205.79	18.862	
10,700.0	6,107.0	6,090.0	6,090.0	85.9	121.8	90.00	-353.4	-428.9	3,980.8	3,773.1	207.68	19.167	
10,800.0	6,107.0	6,090.0	6,090.0	87.8	121.8	90.00	-353.4	-428.9	4,079.9	3,870.3	209.58	19.467	
10,883.4	6,107.0	6,090.0	6,090.0	89.4	121.8	90.00	-353.4	-428.9	4,162.6	3,951.4	211.16	19.713	

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn F-J-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
Reference Site:	Pronghorn F-16 Pad Sec.16-T5N-R61W	MD Reference:	WELL @ 4651.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn F-J-16HNB	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 #1 (12-12-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4651.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: State Pronghorn F-J-16HNB
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.83°



Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Pronghorn F-J-16HNB
Project:	SEC.16-T5N-R61W	TVD Reference:	WELL @ 4651.0ft (RKB - 13')
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Site Error:	0.0ft	North Reference:	True
Reference Well:	State Pronghorn F-J-16HNB	Survey Calculation Method:	Minimum Curvature
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