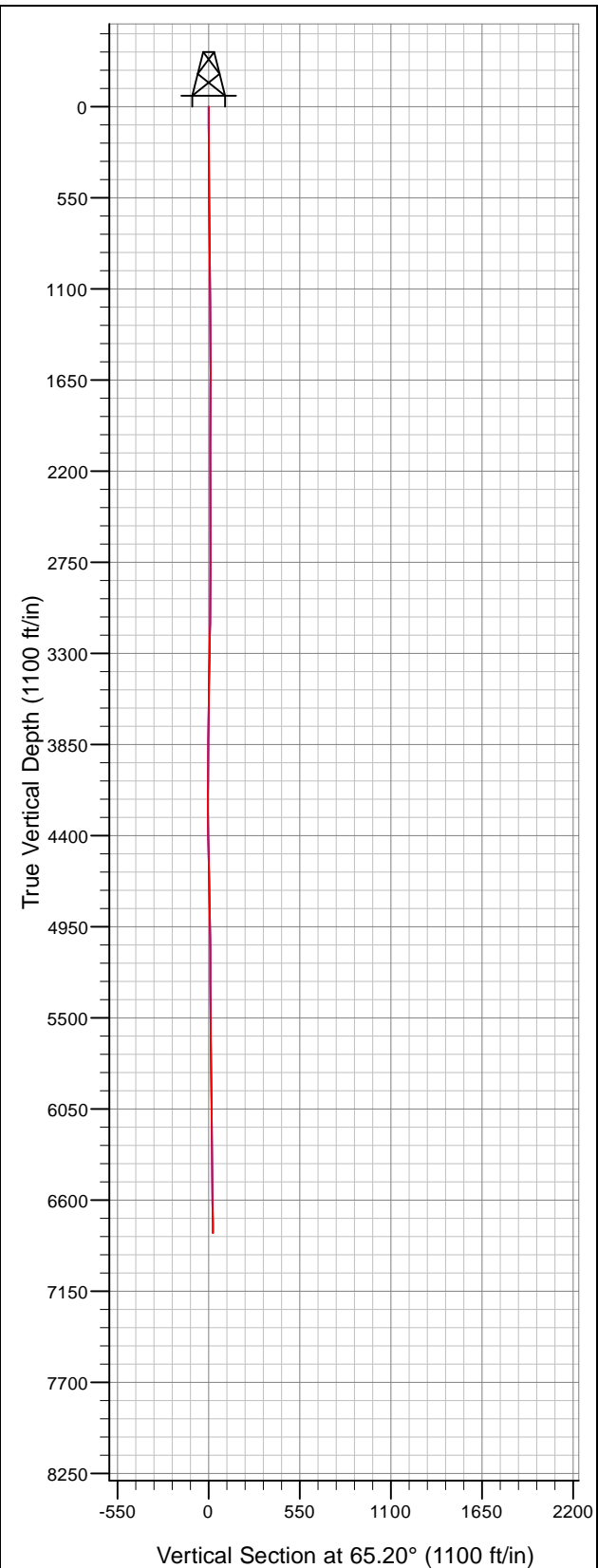


**Well Name: State Seventy Holes J-18**

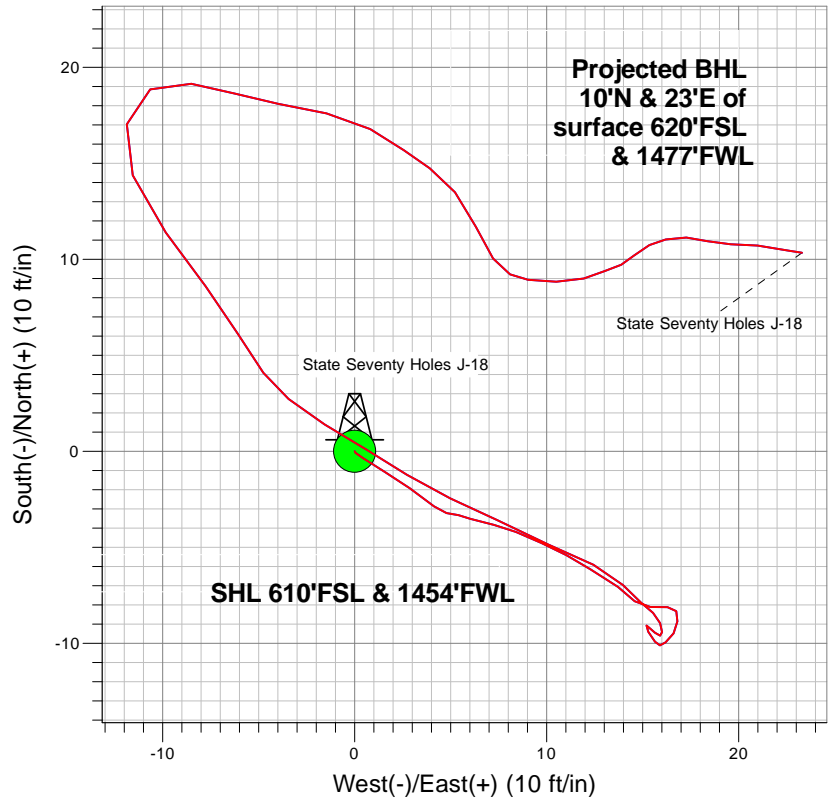
Surface Location: State Seventy Holes J-18 Pad Sec.18-T4N-R62W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 4564.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1356634.03	3314764.91	40.306862	-104.371347	

Original Well Elev WELL @ 4577.0ft (Original Well Elev)



**BONANZA CREEK ENERGY OPERATING**



**LEGEND**

- Wellbore #1
- Survey #1

**Final Survey Plot**

**Projected Final Survey -**  
**6800'MD & 6799'TVD @ 25.5'VS**  
**0.7 deg Inc 99.3 deg AZ**

Project: SEC.18-T4N-R62W  
Site: State Seventy Holes J-18 Pad Sec.18-T4N-R62W  
Well: State Seventy Holes J-18  
Plan: Wellbore #1



# **BONANZA CREEK ENERGY OPERATING**

**SEC.18-T4N-R62W**

**State Seventy Holes J-18 Pad Sec.18-T4N-R62W**

**State Seventy Holes J-18**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**17 November, 2016**

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well State Seventy Holes J-18
<b>Project:</b>	SEC.18-T4N-R62W	<b>TVD Reference:</b>	WELL @ 4577.0ft (Original Well Elev)
<b>Site:</b>	State Seventy Holes J-18 Pad Sec.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4577.0ft (Original Well Elev)
<b>Well:</b>	State Seventy Holes J-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

<b>Project</b>	SEC.18-T4N-R62W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		State Seventy Holes J-18 Pad Sec.18-T4N-R62W			
Site Position:		Northing:	1,356,634.03 usft	Latitude:	40.306862
From:	Lat/Long	Easting:	3,314,764.91 usft	Longitude:	-104.371347
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.73 °

Well	State Seventy Holes J-18					
Well Position	+N/-S	0.0 ft	Northing:	1,356,634.03 usft	Latitude:	40.306862
	+E/-W	0.0 ft	Easting:	3,314,764.91 usft	Longitude:	-104.371347
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,564.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/17/2016	7.91	66.85	52,553

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	65.20	

<b>Survey Program</b>	<b>Date</b>	11/17/2016			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
57.0	6,800.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
57.0	0.20	151.00	57.0	-0.1	0.0	0.0	0.35	0.35	0.00	
119.0	0.70	118.10	119.0	-0.4	0.4	0.2	0.88	0.81	-53.06	
211.0	1.00	125.50	211.0	-1.1	1.6	1.0	0.35	0.33	8.04	
303.0	0.90	120.60	303.0	-1.9	2.9	1.8	0.14	-0.11	-5.33	
425.0	0.60	135.70	425.0	-2.9	4.1	2.5	0.29	-0.25	12.38	
516.0	0.40	92.40	516.0	-3.2	4.8	3.0	0.45	-0.22	-47.58	
608.0	0.40	106.30	608.0	-3.3	5.4	3.5	0.11	0.00	15.11	
669.0	0.80	108.60	669.0	-3.5	6.0	4.0	0.66	0.66	3.77	
761.0	0.80	100.00	760.9	-3.8	7.3	5.0	0.13	0.00	-9.35	

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well State Seventy Holes J-18
<b>Project:</b>	SEC.18-T4N-R62W	<b>TVD Reference:</b>	WELL @ 4577.0ft (Original Well Elev)
<b>Site:</b>	State Seventy Holes J-18 Pad Sec.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4577.0ft (Original Well Elev)
<b>Well:</b>	State Seventy Holes J-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
853.0	0.70	116.20	852.9	-4.2	8.4	5.9	0.25	-0.11	17.61
945.0	1.10	112.10	944.9	-4.8	9.7	6.8	0.44	0.43	-4.46
1,037.0	0.70	121.60	1,036.9	-5.4	11.0	7.7	0.46	-0.43	10.33
1,129.0	1.10	120.20	1,128.9	-6.1	12.3	8.5	0.44	0.43	-1.52
1,223.0	1.00	124.60	1,222.9	-7.1	13.7	9.5	0.14	-0.11	4.68
1,318.0	0.40	145.30	1,317.9	-7.8	14.6	10.0	0.68	-0.63	21.79
1,419.0	0.70	91.20	1,418.9	-8.1	15.4	10.6	0.56	0.30	-53.56
1,512.0	0.40	90.30	1,511.9	-8.1	16.3	11.4	0.32	-0.32	-0.97
1,606.0	0.30	147.60	1,605.9	-8.3	16.8	11.7	0.37	-0.11	60.96
1,700.0	0.40	192.50	1,699.9	-8.9	16.8	11.5	0.30	0.11	47.77
1,795.0	0.40	203.70	1,794.9	-9.5	16.6	11.1	0.08	0.00	11.79
1,890.0	0.40	240.80	1,889.9	-10.0	16.2	10.5	0.27	0.00	39.05
1,984.0	0.00	46.40	1,983.9	-10.1	15.9	10.2	0.43	-0.43	0.00
2,079.0	0.40	306.90	2,078.9	-9.9	15.6	10.0	0.42	0.42	0.00
2,173.0	0.40	345.00	2,172.9	-9.4	15.3	9.9	0.28	0.00	40.53
2,267.0	0.00	33.50	2,266.9	-9.1	15.2	10.0	0.43	-0.43	0.00
2,362.0	0.20	128.10	2,361.9	-9.2	15.3	10.1	0.21	0.21	0.00
2,456.0	0.30	132.20	2,455.9	-9.5	15.6	10.2	0.11	0.11	4.36
2,550.0	0.10	77.30	2,549.9	-9.6	15.9	10.4	0.27	-0.21	-58.40
2,645.0	0.20	8.20	2,644.9	-9.4	16.0	10.6	0.20	0.11	-72.74
2,739.0	0.40	336.90	2,738.9	-9.0	15.9	10.7	0.27	0.21	-33.30
2,834.0	0.40	313.90	2,833.9	-8.4	15.5	10.6	0.17	0.00	-24.21
2,929.0	0.60	308.10	2,928.9	-7.9	14.9	10.2	0.22	0.21	-6.11
3,023.0	1.00	318.10	3,022.8	-7.0	14.0	9.8	0.45	0.43	10.64
3,118.0	1.30	294.10	3,117.8	-5.9	12.4	8.8	0.59	0.32	-25.26
3,212.0	1.80	294.10	3,211.8	-4.9	10.1	7.1	0.53	0.53	0.00
3,307.0	1.80	296.70	3,306.7	-3.6	7.4	5.2	0.09	0.00	2.74
3,401.0	1.50	292.80	3,400.7	-2.5	5.0	3.5	0.34	-0.32	-4.15
3,496.0	1.60	303.90	3,495.7	-1.2	2.7	2.0	0.33	0.11	11.68
3,590.0	1.40	299.90	3,589.6	0.1	0.6	0.6	0.24	-0.21	-4.26
3,685.0	1.70	302.10	3,684.6	1.4	-1.6	-0.8	0.32	0.32	2.32
3,779.0	1.10	310.20	3,778.6	2.7	-3.4	-2.0	0.67	-0.64	8.62
3,874.0	1.20	321.10	3,873.6	4.1	-4.8	-2.6	0.25	0.11	11.47
3,968.0	1.80	330.60	3,967.5	6.1	-6.1	-3.0	0.69	0.64	10.11
4,063.0	1.80	321.10	4,062.5	8.6	-7.8	-3.4	0.31	0.00	-10.00
4,158.0	2.40	325.30	4,157.4	11.4	-9.8	-4.2	0.65	0.63	4.42
4,252.0	1.80	336.20	4,251.3	14.4	-11.6	-4.5	0.76	-0.64	11.60
4,347.0	1.60	12.50	4,346.3	17.0	-11.9	-3.6	1.13	-0.21	38.21
4,442.0	1.30	60.40	4,441.3	18.9	-10.6	-1.8	1.27	-0.32	50.42
4,536.0	1.50	101.00	4,535.3	19.1	-8.5	0.3	1.05	0.21	43.19
4,631.0	1.30	105.10	4,630.2	18.6	-6.3	2.1	0.24	-0.21	4.32
4,726.0	1.50	101.60	4,725.2	18.1	-4.0	4.0	0.23	0.21	-3.68

<b>Company:</b>	BONANZA CREEK ENERGY OPERATING	<b>Local Co-ordinate Reference:</b>	Well State Seventy Holes J-18
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<b>Site:</b>	State Seventy Holes J-18 Pad Sec.18-T4N-R62W	<b>MD Reference:</b>	WELL @ 4577.0ft (Original Well Elev)
<b>Well:</b>	State Seventy Holes J-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,821.0	1.60	100.50	4,820.2	17.6	-1.5	6.0	0.11	0.11	-1.16	
4,915.0	1.40	120.90	4,914.1	16.8	0.8	7.8	0.60	-0.21	21.70	
5,010.0	1.10	123.20	5,009.1	15.7	2.6	8.9	0.32	-0.32	2.42	
5,104.0	0.90	127.20	5,103.1	14.7	3.9	9.7	0.23	-0.21	4.26	
5,199.0	1.30	138.00	5,198.1	13.5	5.2	10.4	0.47	0.42	11.37	
5,293.0	1.30	159.40	5,292.1	11.7	6.3	10.6	0.51	0.00	22.77	
5,388.0	1.00	141.10	5,387.0	10.0	7.2	10.8	0.50	-0.32	-19.26	
5,482.0	0.50	117.60	5,481.0	9.2	8.1	11.2	0.61	-0.53	-25.00	
5,577.0	0.70	98.80	5,576.0	8.9	9.0	11.9	0.29	0.21	-19.79	
5,671.0	1.10	91.20	5,670.0	8.8	10.5	13.2	0.44	0.43	-8.09	
5,764.0	0.70	69.80	5,763.0	9.0	11.9	14.6	0.55	-0.43	-23.01	
5,860.0	0.70	72.20	5,859.0	9.4	13.0	15.8	0.03	0.00	2.50	
5,955.0	0.40	63.80	5,954.0	9.7	13.9	16.7	0.33	-0.32	-8.84	
6,049.0	0.60	47.10	6,048.0	10.2	14.5	17.5	0.26	0.21	-17.77	
6,144.0	0.60	64.80	6,143.0	10.7	15.4	18.4	0.19	0.00	18.63	
6,238.0	0.50	78.20	6,237.0	11.0	16.2	19.3	0.17	-0.11	14.26	
6,333.0	0.80	89.30	6,332.0	11.1	17.3	20.3	0.34	0.32	11.68	
6,427.0	0.60	112.80	6,426.0	10.9	18.4	21.3	0.37	-0.21	25.00	
6,522.0	0.90	87.70	6,521.0	10.8	19.6	22.3	0.46	0.32	-26.42	
6,617.0	0.80	98.90	6,615.9	10.7	21.0	23.5	0.20	-0.11	11.79	
6,743.0	0.70	99.30	6,741.9	10.4	22.6	24.9	0.08	-0.08	0.32	
6,800.0	0.70	99.30	6,798.9	10.3	23.3	25.5	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
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