

# Synergy Resources

Well Name: **Roberts 12-12CHZ**

Surface Location: Roberts 10 Pad Sec.12-T7N-R67W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

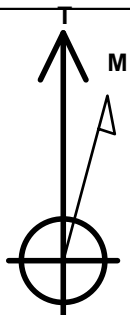
Ground Elevation: 5137.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1458267.06	3185298.35	40.589428	-104.832810	

Original Well Elev WELL @ 5150.0ft (Original Well Elev)

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2417'FNL & 277'FEL	1.0	0.0	0.0	Point
BHL 1918'FNL & 460'FWL	7550.0	458.0	-4526.8	Point



Azimuths to True North  
Magnetic North: 8.47°

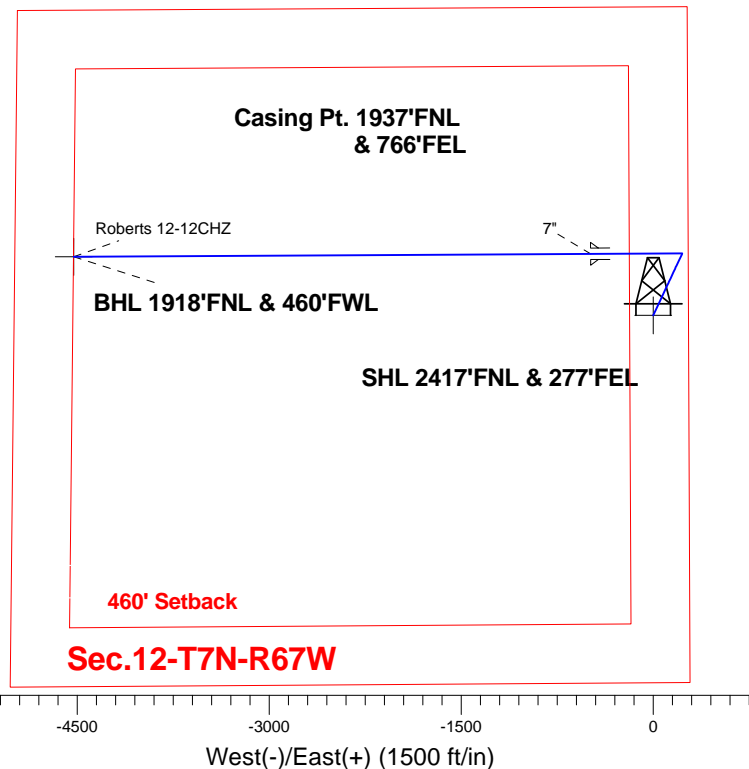
Magnetic Field  
Strength: 52871.5nT  
Dip Angle: 67.08°  
Date: 10/7/2014  
Model: IGRF2010

Roberts 10 Pad Sec.12-T7N-R67W  
Roberts 12-12CHZ  
Plan #1 (10-7-14)  
13:50, October 09 2014

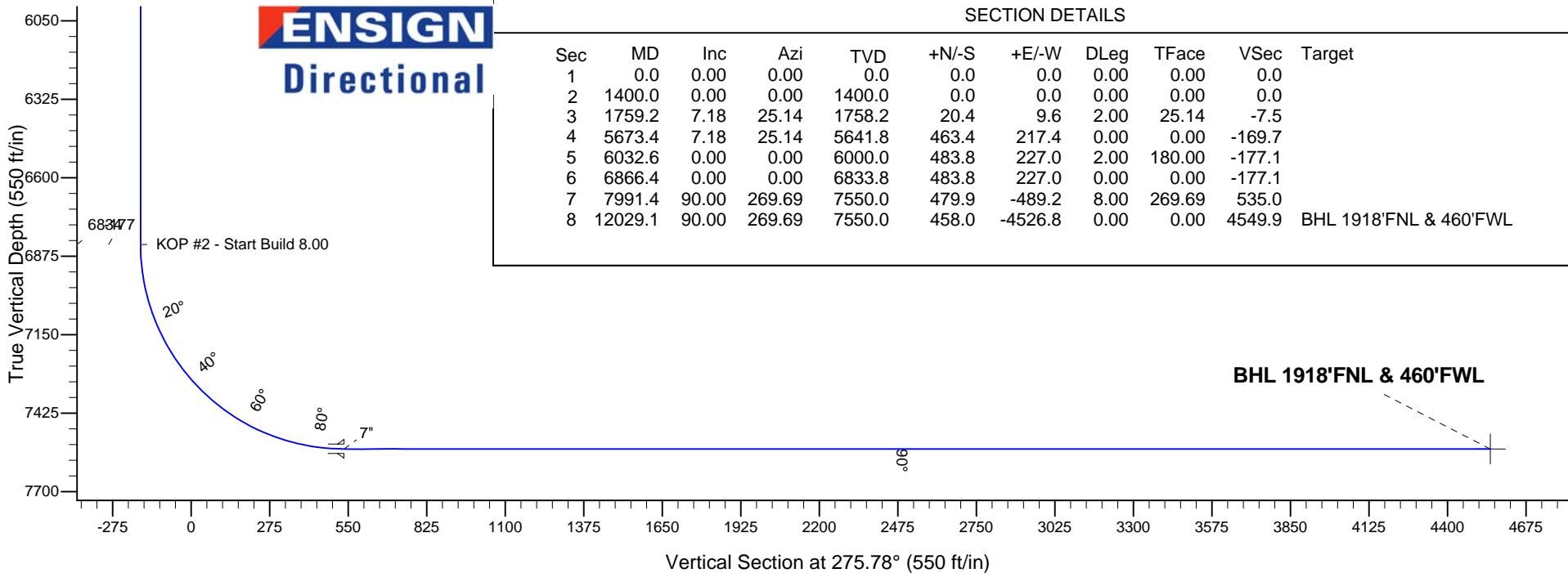
## ANNOTATIONS

TVD	MD	Annotation
1400.0	1400.0	KOP - Start Build 2.00
5641.7	5673.4	Start Drop -2.00
6833.8	6866.4	KOP #2 - Start Build 8.00
7550.0	12029.1	TD at 12029.1

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



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	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	1759.2	7.18	25.14	1758.2	20.4	9.6	2.00	25.14	-7.5	
4	5673.4	7.18	25.14	5641.8	463.4	217.4	0.00	0.00	-169.7	
5	6032.6	0.00	0.00	6000.0	483.8	227.0	2.00	180.00	-177.1	
6	6866.4	0.00	0.00	6833.8	483.8	227.0	0.00	0.00	-177.1	
7	7991.4	90.00	269.69	7550.0	479.9	-489.2	8.00	269.69	535.0	
8	12029.1	90.00	269.69	7550.0	458.0	-4526.8	0.00	0.00	4549.9	BHL 1918'FNL & 460'FWL



## **Synergy Resources**

**SEC.12-T7N-R67W**

**Roberts 10 Pad Sec.12-T7N-R67W**

**Roberts 12-12CHZ**

**Wellbore #1**

**Plan: Plan #1 (10-7-14)**

## **Standard Planning Report**

**09 October, 2014**

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	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,759.2	7.18	25.14	1,758.2	20.4	9.6	2.00	2.00	0.00	25.14	
5,673.4	7.18	25.14	5,641.8	463.4	217.4	0.00	0.00	0.00	0.00	
6,032.6	0.00	0.00	6,000.0	483.8	227.0	2.00	-2.00	0.00	180.00	
6,866.4	0.00	0.00	6,833.8	483.8	227.0	0.00	0.00	0.00	0.00	
7,991.4	90.00	269.69	7,550.0	479.9	-489.2	8.00	8.00	0.00	269.69	
12,029.1	90.00	269.69	7,550.0	458.0	-4,526.8	0.00	0.00	0.00	0.00	BHL 1918'FNL & 46

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Roberts 12-12CHZ
<b>Company:</b>	Synergy Resources	<b>TVD Reference:</b>	WELL @ 5150.0ft (Original Well Elev)
<b>Project:</b>	SEC.12-T7N-R67W	<b>MD Reference:</b>	WELL @ 5150.0ft (Original Well Elev)
<b>Site:</b>	Roberts 10 Pad Sec.12-T7N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Roberts 12-12CHZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-7-14)		

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
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
1,500.0	2.00	25.14	1,500.0	1.6	0.7	-0.6	2.00	2.00	0.00
1,600.0	4.00	25.14	1,599.8	6.3	3.0	-2.3	2.00	2.00	0.00
1,700.0	6.00	25.14	1,699.5	14.2	6.7	-5.2	2.00	2.00	0.00
1,759.2	7.18	25.14	1,758.2	20.4	9.6	-7.5	2.00	2.00	0.00
1,800.0	7.18	25.14	1,798.7	25.0	11.7	-9.1	0.00	0.00	0.00
1,900.0	7.18	25.14	1,898.0	36.3	17.0	-13.3	0.00	0.00	0.00
2,000.0	7.18	25.14	1,997.2	47.6	22.3	-17.4	0.00	0.00	0.00
2,100.0	7.18	25.14	2,096.4	58.9	27.7	-21.6	0.00	0.00	0.00
2,200.0	7.18	25.14	2,195.6	70.3	33.0	-25.7	0.00	0.00	0.00
2,300.0	7.18	25.14	2,294.8	81.6	38.3	-29.9	0.00	0.00	0.00
2,400.0	7.18	25.14	2,394.0	92.9	43.6	-34.0	0.00	0.00	0.00
2,500.0	7.18	25.14	2,493.2	104.2	48.9	-38.2	0.00	0.00	0.00
2,600.0	7.18	25.14	2,592.5	115.5	54.2	-42.3	0.00	0.00	0.00
2,700.0	7.18	25.14	2,691.7	126.9	59.5	-46.4	0.00	0.00	0.00
2,800.0	7.18	25.14	2,790.9	138.2	64.8	-50.6	0.00	0.00	0.00
2,900.0	7.18	25.14	2,890.1	149.5	70.1	-54.7	0.00	0.00	0.00
3,000.0	7.18	25.14	2,989.3	160.8	75.5	-58.9	0.00	0.00	0.00
3,100.0	7.18	25.14	3,088.5	172.1	80.8	-63.0	0.00	0.00	0.00
3,200.0	7.18	25.14	3,187.8	183.5	86.1	-67.2	0.00	0.00	0.00
3,300.0	7.18	25.14	3,287.0	194.8	91.4	-71.3	0.00	0.00	0.00
3,400.0	7.18	25.14	3,386.2	206.1	96.7	-75.5	0.00	0.00	0.00
3,500.0	7.18	25.14	3,485.4	217.4	102.0	-79.6	0.00	0.00	0.00
3,600.0	7.18	25.14	3,584.6	228.7	107.3	-83.8	0.00	0.00	0.00
3,700.0	7.18	25.14	3,683.8	240.1	112.6	-87.9	0.00	0.00	0.00
3,800.0	7.18	25.14	3,783.0	251.4	117.9	-92.0	0.00	0.00	0.00
3,900.0	7.18	25.14	3,882.3	262.7	123.3	-96.2	0.00	0.00	0.00
4,000.0	7.18	25.14	3,981.5	274.0	128.6	-100.3	0.00	0.00	0.00
4,100.0	7.18	25.14	4,080.7	285.3	133.9	-104.5	0.00	0.00	0.00
4,200.0	7.18	25.14	4,179.9	296.7	139.2	-108.6	0.00	0.00	0.00
4,300.0	7.18	25.14	4,279.1	308.0	144.5	-112.8	0.00	0.00	0.00
4,400.0	7.18	25.14	4,378.3	319.3	149.8	-116.9	0.00	0.00	0.00
4,500.0	7.18	25.14	4,477.5	330.6	155.1	-121.1	0.00	0.00	0.00
4,600.0	7.18	25.14	4,576.8	341.9	160.4	-125.2	0.00	0.00	0.00
4,700.0	7.18	25.14	4,676.0	353.3	165.7	-129.3	0.00	0.00	0.00
4,800.0	7.18	25.14	4,775.2	364.6	171.1	-133.5	0.00	0.00	0.00
4,900.0	7.18	25.14	4,874.4	375.9	176.4	-137.6	0.00	0.00	0.00
5,000.0	7.18	25.14	4,973.6	387.2	181.7	-141.8	0.00	0.00	0.00
5,100.0	7.18	25.14	5,072.8	398.5	187.0	-145.9	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Roberts 12-12CHZ
<b>Company:</b>	Synergy Resources	<b>TVD Reference:</b>	WELL @ 5150.0ft (Original Well Elev)
<b>Project:</b>	SEC.12-T7N-R67W	<b>MD Reference:</b>	WELL @ 5150.0ft (Original Well Elev)
<b>Site:</b>	Roberts 10 Pad Sec.12-T7N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Roberts 12-12CHZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-7-14)		

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)
5,200.0	7.18	25.14	5,172.1	409.9	192.3	-150.1	0.00	0.00	0.00
5,300.0	7.18	25.14	5,271.3	421.2	197.6	-154.2	0.00	0.00	0.00
5,400.0	7.18	25.14	5,370.5	432.5	202.9	-158.4	0.00	0.00	0.00
5,500.0	7.18	25.14	5,469.7	443.8	208.2	-162.5	0.00	0.00	0.00
5,600.0	7.18	25.14	5,568.9	455.1	213.5	-166.6	0.00	0.00	0.00
5,673.4	7.18	25.14	5,641.7	463.4	217.4	-169.7	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,700.0	6.65	25.14	5,668.1	466.3	218.8	-170.8	2.00	-2.00	0.00
5,800.0	4.65	25.14	5,767.7	475.3	223.0	-174.0	2.00	-2.00	0.00
5,900.0	2.65	25.14	5,867.4	481.0	225.7	-176.1	2.00	-2.00	0.00
6,000.0	0.65	25.14	5,967.4	483.6	226.9	-177.1	2.00	-2.00	0.00
6,032.6	0.00	0.00	6,000.0	483.8	227.0	-177.1	2.00	-2.00	0.00
6,100.0	0.00	0.00	6,067.4	483.8	227.0	-177.1	0.00	0.00	0.00
6,200.0	0.00	0.00	6,167.4	483.8	227.0	-177.1	0.00	0.00	0.00
6,300.0	0.00	0.00	6,267.4	483.8	227.0	-177.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,367.4	483.8	227.0	-177.1	0.00	0.00	0.00
6,500.0	0.00	0.00	6,467.4	483.8	227.0	-177.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,567.4	483.8	227.0	-177.1	0.00	0.00	0.00
6,700.0	0.00	0.00	6,667.4	483.8	227.0	-177.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,767.4	483.8	227.0	-177.1	0.00	0.00	0.00
6,866.4	0.00	0.00	6,833.8	483.8	227.0	-177.1	0.00	0.00	0.00
<b>KOP #2 - Start Build 8.00</b>									
6,900.0	2.69	269.69	6,867.4	483.8	226.2	-176.4	8.00	8.00	0.00
7,000.0	10.69	269.69	6,966.6	483.7	214.6	-164.8	8.00	8.00	0.00
7,100.0	18.69	269.69	7,063.3	483.6	189.2	-139.6	8.00	8.00	0.00
7,200.0	26.69	269.69	7,155.5	483.4	150.7	-101.3	8.00	8.00	0.00
7,300.0	34.69	269.69	7,241.4	483.1	99.7	-50.6	8.00	8.00	0.00
7,400.0	42.69	269.69	7,319.4	482.8	37.3	11.5	8.00	8.00	0.00
7,500.0	50.69	269.69	7,387.9	482.4	-35.4	83.8	8.00	8.00	0.00
7,600.0	58.69	269.69	7,445.7	481.9	-117.0	164.9	8.00	8.00	0.00
7,700.0	66.69	269.69	7,491.5	481.5	-205.8	253.2	8.00	8.00	0.00
7,800.0	74.69	269.69	7,524.6	480.9	-300.1	346.9	8.00	8.00	0.00
7,900.0	82.69	269.69	7,544.2	480.4	-398.0	444.4	8.00	8.00	0.00
7,991.4	90.00	269.69	7,550.0	479.9	-489.2	535.0	8.00	8.00	0.00
<b>7"</b>									
8,000.0	90.00	269.69	7,550.0	479.9	-497.8	543.6	0.00	0.00	0.00
8,100.0	90.00	269.69	7,550.0	479.3	-597.8	643.0	0.00	0.00	0.00
8,200.0	90.00	269.69	7,550.0	478.8	-697.8	742.4	0.00	0.00	0.00
8,300.0	90.00	269.69	7,550.0	478.2	-797.8	841.9	0.00	0.00	0.00
8,400.0	90.00	269.69	7,550.0	477.7	-897.8	941.3	0.00	0.00	0.00
8,500.0	90.00	269.69	7,550.0	477.2	-997.8	1,040.7	0.00	0.00	0.00
8,600.0	90.00	269.69	7,550.0	476.6	-1,097.8	1,140.2	0.00	0.00	0.00
8,700.0	90.00	269.69	7,550.0	476.1	-1,197.8	1,239.6	0.00	0.00	0.00
8,800.0	90.00	269.69	7,550.0	475.5	-1,297.8	1,339.1	0.00	0.00	0.00
8,900.0	90.00	269.69	7,550.0	475.0	-1,397.8	1,438.5	0.00	0.00	0.00
9,000.0	90.00	269.69	7,550.0	474.4	-1,497.8	1,537.9	0.00	0.00	0.00
9,100.0	90.00	269.69	7,550.0	473.9	-1,597.8	1,637.4	0.00	0.00	0.00
9,200.0	90.00	269.69	7,550.0	473.4	-1,697.8	1,736.8	0.00	0.00	0.00
9,300.0	90.00	269.69	7,550.0	472.8	-1,797.8	1,836.2	0.00	0.00	0.00
9,400.0	90.00	269.69	7,550.0	472.3	-1,897.8	1,935.7	0.00	0.00	0.00
9,500.0	90.00	269.69	7,550.0	471.7	-1,997.8	2,035.1	0.00	0.00	0.00
9,600.0	90.00	269.69	7,550.0	471.2	-2,097.8	2,134.5	0.00	0.00	0.00
9,700.0	90.00	269.69	7,550.0	470.7	-2,197.8	2,234.0	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Roberts 12-12CHZ
<b>Company:</b>	Synergy Resources	<b>TVD Reference:</b>	WELL @ 5150.0ft (Original Well Elev)
<b>Project:</b>	SEC.12-T7N-R67W	<b>MD Reference:</b>	WELL @ 5150.0ft (Original Well Elev)
<b>Site:</b>	Roberts 10 Pad Sec.12-T7N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Roberts 12-12CHZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-7-14)		

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)	
9,800.0	90.00	269.69	7,550.0	470.1	-2,297.8	2,333.4	0.00	0.00	0.00	
9,900.0	90.00	269.69	7,550.0	469.6	-2,397.8	2,432.8	0.00	0.00	0.00	
10,000.0	90.00	269.69	7,550.0	469.0	-2,497.8	2,532.3	0.00	0.00	0.00	
10,100.0	90.00	269.69	7,550.0	468.5	-2,597.8	2,631.7	0.00	0.00	0.00	
10,200.0	90.00	269.69	7,550.0	467.9	-2,697.8	2,731.2	0.00	0.00	0.00	
10,300.0	90.00	269.69	7,550.0	467.4	-2,797.8	2,830.6	0.00	0.00	0.00	
10,400.0	90.00	269.69	7,550.0	466.9	-2,897.7	2,930.0	0.00	0.00	0.00	
10,500.0	90.00	269.69	7,550.0	466.3	-2,997.7	3,029.5	0.00	0.00	0.00	
10,600.0	90.00	269.69	7,550.0	465.8	-3,097.7	3,128.9	0.00	0.00	0.00	
10,700.0	90.00	269.69	7,550.0	465.2	-3,197.7	3,228.3	0.00	0.00	0.00	
10,800.0	90.00	269.69	7,550.0	464.7	-3,297.7	3,327.8	0.00	0.00	0.00	
10,900.0	90.00	269.69	7,550.0	464.1	-3,397.7	3,427.2	0.00	0.00	0.00	
11,000.0	90.00	269.69	7,550.0	463.6	-3,497.7	3,526.6	0.00	0.00	0.00	
11,100.0	90.00	269.69	7,550.0	463.1	-3,597.7	3,626.1	0.00	0.00	0.00	
11,200.0	90.00	269.69	7,550.0	462.5	-3,697.7	3,725.5	0.00	0.00	0.00	
11,300.0	90.00	269.69	7,550.0	462.0	-3,797.7	3,824.9	0.00	0.00	0.00	
11,400.0	90.00	269.69	7,550.0	461.4	-3,897.7	3,924.4	0.00	0.00	0.00	
11,500.0	90.00	269.69	7,550.0	460.9	-3,997.7	4,023.8	0.00	0.00	0.00	
11,600.0	90.00	269.69	7,550.0	460.3	-4,097.7	4,123.3	0.00	0.00	0.00	
11,700.0	90.00	269.69	7,550.0	459.8	-4,197.7	4,222.7	0.00	0.00	0.00	
11,800.0	90.00	269.69	7,550.0	459.3	-4,297.7	4,322.1	0.00	0.00	0.00	
11,900.0	90.00	269.69	7,550.0	458.7	-4,397.7	4,421.6	0.00	0.00	0.00	
12,000.0	90.00	269.69	7,550.0	458.2	-4,497.7	4,521.0	0.00	0.00	0.00	
12,029.1	90.00	269.69	7,550.0	458.0	-4,526.8	4,549.9	0.00	0.00	0.00	

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
SHL 2417'FNL & 277'	0.00	0.00	1.0	0.0	0.0	1,458,267.07	3,185,298.35	40.589428	-104.832810	
- plan hits target center										
- Point										
BHL 1918'FNL & 460'	0.00	0.00	7,550.0	458.0	-4,526.8	1,458,691.00	3,180,768.36	40.590684	-104.849109	
- plan hits target center										
- Point										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
7,991.4	7,550.0	7"	7	7-1/2		

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Roberts 12-12CHZ
<b>Company:</b>	Synergy Resources	<b>TVD Reference:</b>	WELL @ 5150.0ft (Original Well Elev)
<b>Project:</b>	SEC.12-T7N-R67W	<b>MD Reference:</b>	WELL @ 5150.0ft (Original Well Elev)
<b>Site:</b>	Roberts 10 Pad Sec.12-T7N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Roberts 12-12CHZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-7-14)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,400.0	1,400.0	0.0	0.0	KOP - Start Build 2.00
5,673.4	5,641.7	463.4	217.4	Start Drop -2.00
6,866.4	6,833.8	483.8	227.0	KOP #2 - Start Build 8.00
12,029.1	7,550.0	458.0	-4,526.8	TD at 12029.1