

# EN SIGN

## Directional

**Well Name: Margil 34KD**

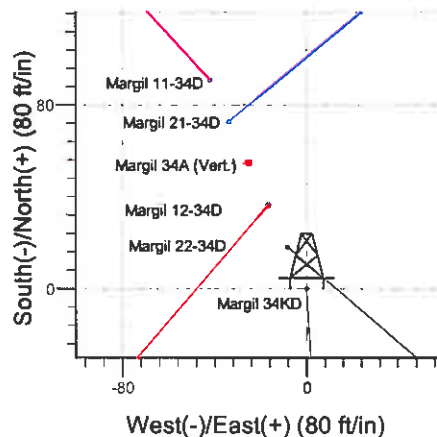
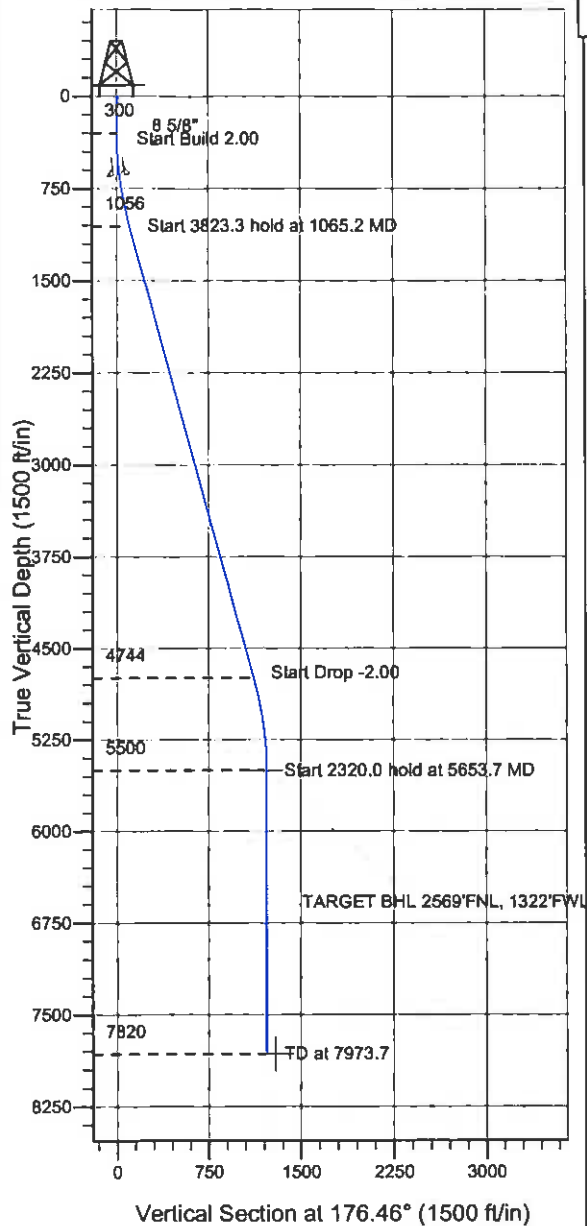
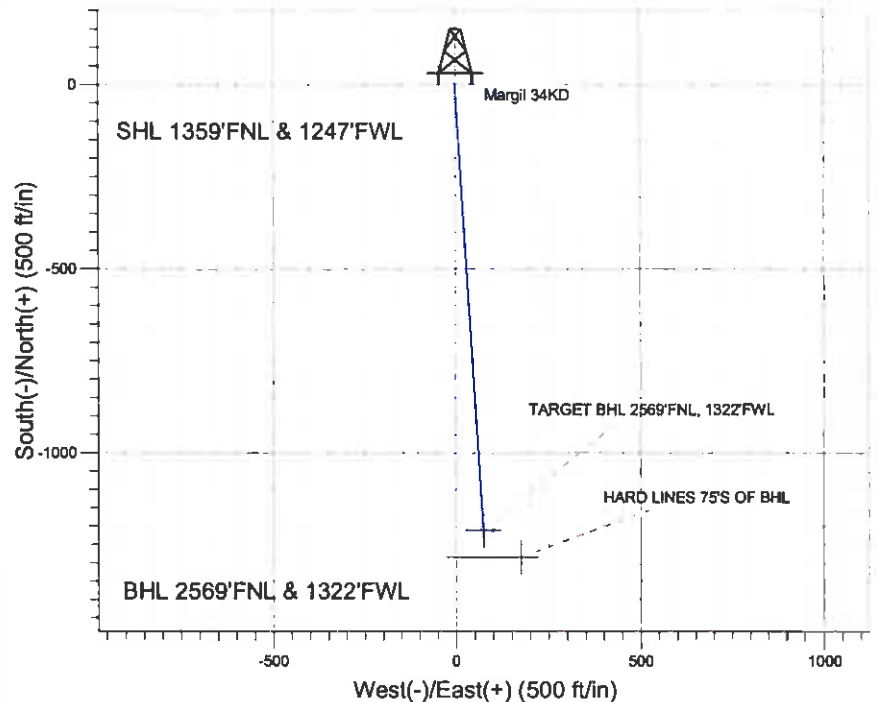
Surface Location: Margil 11-34D Pad Sec.34-T4N-R68W  
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 5106.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1342824.91	3141130.15	40.273349	-104.994210	

Original Well Elev WELL @ 5119.0ft (Original Well Elev)

### Synergy Resources



Margil 11-34D Pad Sec.34-T4N-R68W  
 Margil 34KD  
 Plan #1 (5-23-11)  
 10:51, May 27 2011



Azimuths to True North  
 Magnetic North 8.98°

Magnetic Field  
 Strength: 53044.2snT  
 Dip Angle: 66.91°  
 Date: 5/23/2011  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2569'FNL, 1322'FWL	5500.0	-1210.0	74.8	40.270028	-104.993942	Point
HARD LINES 75'S OF BHL	7820.0	-1285.0	174.8	40.269822	-104.993584	Polygon

### 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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	1065.2	15.30	176.46	1056.1	-101.4	6.3	2.00	176.46	101.6	
4	4888.5	15.30	176.46	4743.9	-1108.6	68.5	0.00	0.00	1110.7	
5	5653.7	0.00	0.00	5500.0	-1210.0	74.8	2.00	180.00	1212.3	TARGET BHL 2569'FNL, 1322'FWL
6	7973.7	0.00	0.00	7820.0	-1210.0	74.8	0.00	0.00	1212.3	



## **Directional**

### **Synergy Resources**

**SEC.34-T4N-R68W**

**Margil 11-34D Pad Sec.34-T4N-R68W**

**Margil 34KD**

**Wellbore #1**

**Plan: Plan #1 (5-23-11)**

### **Standard Planning Report**

**27 May, 2011**

# **ENSIGN** Directional

## Planning Report

**Database:** Landmark  
**Company:** Synergy Resources  
**Project:** SEC.34-T4N-R68W  
**Site:** Margil 11-34D Pad Sec.34-T4N-R68W  
**Well:** Margil 34KD  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 34KD  
**TVD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

<b>Project</b>	SEC.34-T4N-R68W, Weld County, Colorado		
<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

<b>Site</b>	Margil 11-34D Pad Sec.34-T4N-R68W			
<b>Site Position:</b>		<b>Northing:</b>	1,342,915.75 ft	<b>Latitude:</b> 40.273599
<b>From:</b>	Lai/Long	<b>Easting:</b>	3,141,087.50 ft	<b>Longitude:</b> -104.994361
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b> 0.33 °

<b>Well</b>	Margil 34KD			
<b>Well Position</b>	<b>+N/-S</b>	-91.1 ft	<b>Northing:</b>	1,342,824.91 ft
	<b>+E/-W</b>	42.1 ft	<b>Easting:</b>	3,141,130.15 ft
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft
			<b>Ground Level:</b>	5,106.0 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	5/23/2011	8.98	66.91	53,044

<b>Design</b>	Plan #1 (5-23-11)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	176.46

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,065.2	15.30	176.46	1,056.1	-101.4	6.3	2.00	2.00	0.00	176.46	
4,888.5	15.30	176.46	4,743.9	-1,108.6	68.5	0.00	0.00	0.00	0.00	
5,653.7	0.00	0.00	5,500.0	-1,210.0	74.8	2.00	-2.00	0.00	180.00	TARGET BHL 2566
7,973.7	0.00	0.00	7,820.0	-1,210.0	74.8	0.00	0.00	0.00	0.00	

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**Site:** Margil 11-34D Pad Sec.34-T4N-R68W  
**Well:** Margil 34KD  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

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**MD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	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
320.0	0.40	176.46	320.0	-0.1	0.0	0.1	2.00	2.00	0.00
360.0	1.20	176.46	360.0	-0.6	0.0	0.6	2.00	2.00	0.00
400.0	2.00	176.46	400.0	-1.7	0.1	1.7	2.00	2.00	0.00
440.0	2.80	176.46	439.9	-3.4	0.2	3.4	2.00	2.00	0.00
480.0	3.60	176.46	479.9	-5.6	0.3	5.7	2.00	2.00	0.00
520.0	4.40	176.46	519.8	-8.4	0.5	8.4	2.00	2.00	0.00
560.0	5.20	176.46	559.6	-11.8	0.7	11.8	2.00	2.00	0.00
600.0	6.00	176.46	599.5	-15.7	1.0	15.7	2.00	2.00	0.00
640.0	6.80	176.46	639.2	-20.1	1.2	20.2	2.00	2.00	0.00
640.8	6.82	176.46	640.0	-20.2	1.2	20.2	2.00	2.00	0.00
8 5/8"									
680.0	7.60	176.46	678.9	-25.1	1.6	25.2	2.00	2.00	0.00
720.0	8.40	176.46	718.5	-30.7	1.9	30.7	2.00	2.00	0.00
760.0	9.20	176.46	758.0	-36.8	2.3	36.9	2.00	2.00	0.00
800.0	10.00	176.46	797.5	-43.4	2.7	43.5	2.00	2.00	0.00
840.0	10.80	176.46	836.8	-50.6	3.1	50.7	2.00	2.00	0.00
880.0	11.60	176.46	876.0	-58.4	3.6	58.5	2.00	2.00	0.00
920.0	12.40	176.46	915.2	-66.7	4.1	66.8	2.00	2.00	0.00
960.0	13.20	176.46	954.2	-75.5	4.7	75.7	2.00	2.00	0.00
1,000.0	14.00	176.46	993.1	-84.9	5.2	85.1	2.00	2.00	0.00
1,040.0	14.80	176.46	1,031.8	-94.9	5.9	95.0	2.00	2.00	0.00
1,065.2	15.30	176.46	1,056.1	-101.4	6.3	101.6	2.00	2.00	0.00
1,080.0	15.30	176.46	1,070.4	-105.3	6.5	105.5	0.00	0.00	0.00
1,120.0	15.30	176.46	1,109.0	-115.8	7.2	116.1	0.00	0.00	0.00
1,160.0	15.30	176.46	1,147.6	-126.4	7.8	126.6	0.00	0.00	0.00
1,200.0	15.30	176.46	1,186.2	-136.9	8.5	137.2	0.00	0.00	0.00
1,240.0	15.30	176.46	1,224.7	-147.4	9.1	147.7	0.00	0.00	0.00
1,280.0	15.30	176.46	1,263.3	-158.0	9.8	158.3	0.00	0.00	0.00
1,320.0	15.30	176.46	1,301.9	-168.5	10.4	168.8	0.00	0.00	0.00
1,360.0	15.30	176.46	1,340.5	-179.1	11.1	179.4	0.00	0.00	0.00
1,400.0	15.30	176.46	1,379.1	-189.6	11.7	190.0	0.00	0.00	0.00
1,440.0	15.30	176.46	1,417.6	-200.1	12.4	200.5	0.00	0.00	0.00
1,480.0	15.30	176.46	1,456.2	-210.7	13.0	211.1	0.00	0.00	0.00
1,520.0	15.30	176.46	1,494.8	-221.2	13.7	221.6	0.00	0.00	0.00
1,560.0	15.30	176.46	1,533.4	-231.7	14.3	232.2	0.00	0.00	0.00
1,600.0	15.30	176.46	1,572.0	-242.3	15.0	242.7	0.00	0.00	0.00
1,640.0	15.30	176.46	1,610.6	-252.8	15.6	253.3	0.00	0.00	0.00
1,680.0	15.30	176.46	1,649.1	-263.4	16.3	263.9	0.00	0.00	0.00
1,720.0	15.30	176.46	1,687.7	-273.9	16.9	274.4	0.00	0.00	0.00
1,760.0	15.30	176.46	1,726.3	-284.4	17.6	285.0	0.00	0.00	0.00
1,800.0	15.30	176.46	1,764.9	-295.0	18.2	295.5	0.00	0.00	0.00
1,840.0	15.30	176.46	1,803.5	-305.5	18.9	306.1	0.00	0.00	0.00
1,880.0	15.30	176.46	1,842.0	-316.0	19.5	316.6	0.00	0.00	0.00
1,920.0	15.30	176.46	1,880.6	-326.6	20.2	327.2	0.00	0.00	0.00
1,960.0	15.30	176.46	1,919.2	-337.1	20.8	337.8	0.00	0.00	0.00

**Database:** Landmark  
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**Well:** Margil 34KD  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 34KD  
**TVD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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)
2,000.0	15.30	176.46	1,957.8	-347.7	21.5	348.3	0.00	0.00	0.00
2,040.0	15.30	176.46	1,996.4	-358.2	22.1	358.9	0.00	0.00	0.00
2,080.0	15.30	176.46	2,034.9	-368.7	22.8	369.4	0.00	0.00	0.00
2,120.0	15.30	176.46	2,073.5	-379.3	23.4	380.0	0.00	0.00	0.00
2,160.0	15.30	176.46	2,112.1	-389.8	24.1	390.6	0.00	0.00	0.00
2,200.0	15.30	176.46	2,150.7	-400.3	24.7	401.1	0.00	0.00	0.00
2,240.0	15.30	176.46	2,189.3	-410.9	25.4	411.7	0.00	0.00	0.00
2,280.0	15.30	176.46	2,227.9	-421.4	26.0	422.2	0.00	0.00	0.00
2,320.0	15.30	176.46	2,266.4	-432.0	26.7	432.8	0.00	0.00	0.00
2,360.0	15.30	176.46	2,305.0	-442.5	27.3	443.3	0.00	0.00	0.00
2,400.0	15.30	176.46	2,343.6	-453.0	28.0	453.9	0.00	0.00	0.00
2,440.0	15.30	176.46	2,382.2	-463.6	28.7	464.5	0.00	0.00	0.00
2,480.0	15.30	176.46	2,420.8	-474.1	29.3	475.0	0.00	0.00	0.00
2,520.0	15.30	176.46	2,459.3	-484.6	30.0	485.6	0.00	0.00	0.00
2,560.0	15.30	176.46	2,497.9	-495.2	30.6	496.1	0.00	0.00	0.00
2,600.0	15.30	176.46	2,536.5	-505.7	31.3	506.7	0.00	0.00	0.00
2,640.0	15.30	176.46	2,575.1	-516.3	31.9	517.2	0.00	0.00	0.00
2,680.0	15.30	176.46	2,613.7	-526.8	32.6	527.8	0.00	0.00	0.00
2,720.0	15.30	176.46	2,652.3	-537.3	33.2	538.4	0.00	0.00	0.00
2,760.0	15.30	176.46	2,690.8	-547.9	33.9	548.9	0.00	0.00	0.00
2,800.0	15.30	176.46	2,729.4	-558.4	34.5	559.5	0.00	0.00	0.00
2,840.0	15.30	176.46	2,768.0	-568.9	35.2	570.0	0.00	0.00	0.00
2,880.0	15.30	176.46	2,806.6	-579.5	35.8	580.6	0.00	0.00	0.00
2,920.0	15.30	176.46	2,845.2	-590.0	36.5	591.1	0.00	0.00	0.00
2,960.0	15.30	176.46	2,883.7	-600.6	37.1	601.7	0.00	0.00	0.00
3,000.0	15.30	176.46	2,922.3	-611.1	37.8	612.3	0.00	0.00	0.00
3,040.0	15.30	176.46	2,960.9	-621.6	38.4	622.8	0.00	0.00	0.00
3,080.0	15.30	176.46	2,999.5	-632.2	39.1	633.4	0.00	0.00	0.00
3,120.0	15.30	176.46	3,038.1	-642.7	39.7	643.9	0.00	0.00	0.00
3,160.0	15.30	176.46	3,076.6	-653.2	40.4	654.5	0.00	0.00	0.00
3,200.0	15.30	176.46	3,115.2	-663.8	41.0	665.0	0.00	0.00	0.00
3,240.0	15.30	176.46	3,153.8	-674.3	41.7	675.6	0.00	0.00	0.00
3,280.0	15.30	176.46	3,192.4	-684.9	42.3	686.2	0.00	0.00	0.00
3,320.0	15.30	176.46	3,231.0	-695.4	43.0	696.7	0.00	0.00	0.00
3,360.0	15.30	176.46	3,269.6	-705.9	43.6	707.3	0.00	0.00	0.00
3,400.0	15.30	176.46	3,308.1	-716.5	44.3	717.8	0.00	0.00	0.00
3,440.0	15.30	176.46	3,346.7	-727.0	44.9	728.4	0.00	0.00	0.00
3,480.0	15.30	176.46	3,385.3	-737.5	45.6	739.0	0.00	0.00	0.00
3,520.0	15.30	176.46	3,423.9	-748.1	46.2	749.5	0.00	0.00	0.00
3,560.0	15.30	176.46	3,462.5	-758.6	46.9	760.1	0.00	0.00	0.00
3,600.0	15.30	176.46	3,501.0	-769.2	47.5	770.6	0.00	0.00	0.00
3,640.0	15.30	176.46	3,539.6	-779.7	48.2	781.2	0.00	0.00	0.00
3,680.0	15.30	176.46	3,578.2	-790.2	48.8	791.7	0.00	0.00	0.00
3,720.0	15.30	176.46	3,616.8	-800.8	49.5	802.3	0.00	0.00	0.00
3,760.0	15.30	176.46	3,655.4	-811.3	50.1	812.9	0.00	0.00	0.00
3,800.0	15.30	176.46	3,694.0	-821.8	50.8	823.4	0.00	0.00	0.00
3,840.0	15.30	176.46	3,732.5	-832.4	51.4	834.0	0.00	0.00	0.00
3,880.0	15.30	176.46	3,771.1	-842.9	52.1	844.5	0.00	0.00	0.00
3,920.0	15.30	176.46	3,809.7	-853.5	52.8	855.1	0.00	0.00	0.00
3,960.0	15.30	176.46	3,848.3	-864.0	53.4	865.6	0.00	0.00	0.00
4,000.0	15.30	176.46	3,886.9	-874.5	54.1	876.2	0.00	0.00	0.00
4,040.0	15.30	176.46	3,925.4	-885.1	54.7	886.8	0.00	0.00	0.00
4,080.0	15.30	176.46	3,964.0	-895.6	55.4	897.3	0.00	0.00	0.00
4,120.0	15.30	176.46	4,002.6	-906.1	56.0	907.9	0.00	0.00	0.00

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**Survey Calculation Method:** Minimum Curvature

### 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)
4,160.0	15.30	176.46	4,041.2	-916.7	56.7	918.4	0.00	0.00	0.00
4,200.0	15.30	176.46	4,079.8	-927.2	57.3	929.0	0.00	0.00	0.00
4,240.0	15.30	176.46	4,118.4	-937.8	58.0	939.5	0.00	0.00	0.00
4,280.0	15.30	176.46	4,156.9	-948.3	58.6	950.1	0.00	0.00	0.00
4,320.0	15.30	176.46	4,195.5	-958.8	59.3	960.7	0.00	0.00	0.00
4,360.0	15.30	176.46	4,234.1	-969.4	59.9	971.2	0.00	0.00	0.00
4,400.0	15.30	176.46	4,272.7	-979.9	60.6	981.8	0.00	0.00	0.00
4,440.0	15.30	176.46	4,311.3	-990.4	61.2	992.3	0.00	0.00	0.00
4,480.0	15.30	176.46	4,349.8	-1,001.0	61.9	1,002.9	0.00	0.00	0.00
4,520.0	15.30	176.46	4,388.4	-1,011.5	62.5	1,013.5	0.00	0.00	0.00
4,560.0	15.30	176.46	4,427.0	-1,022.1	63.2	1,024.0	0.00	0.00	0.00
4,600.0	15.30	176.46	4,465.6	-1,032.6	63.8	1,034.6	0.00	0.00	0.00
4,640.0	15.30	176.46	4,504.2	-1,043.1	64.5	1,045.1	0.00	0.00	0.00
4,680.0	15.30	176.46	4,542.7	-1,053.7	65.1	1,055.7	0.00	0.00	0.00
4,720.0	15.30	176.46	4,581.3	-1,064.2	65.8	1,066.2	0.00	0.00	0.00
4,760.0	15.30	176.46	4,619.9	-1,074.7	66.4	1,076.8	0.00	0.00	0.00
4,800.0	15.30	176.46	4,658.5	-1,085.3	67.1	1,087.4	0.00	0.00	0.00
4,840.0	15.30	176.46	4,697.1	-1,095.8	67.7	1,097.9	0.00	0.00	0.00
4,880.0	15.30	176.46	4,735.7	-1,106.4	68.4	1,108.5	0.00	0.00	0.00
4,888.5	15.30	176.46	4,743.9	-1,108.6	68.5	1,110.7	0.00	0.00	0.00
4,920.0	14.67	176.46	4,774.3	-1,116.7	69.0	1,118.9	2.00	-2.00	0.00
4,960.0	13.87	176.46	4,813.0	-1,126.6	69.6	1,128.7	2.00	-2.00	0.00
5,000.0	13.07	176.46	4,851.9	-1,135.9	70.2	1,138.0	2.00	-2.00	0.00
5,040.0	12.27	176.46	4,891.0	-1,144.6	70.7	1,146.8	2.00	-2.00	0.00
5,080.0	11.47	176.46	4,930.1	-1,152.9	71.3	1,155.1	2.00	-2.00	0.00
5,120.0	10.67	176.46	4,969.4	-1,160.5	71.7	1,162.7	2.00	-2.00	0.00
5,160.0	9.87	176.46	5,008.7	-1,167.6	72.2	1,169.9	2.00	-2.00	0.00
5,200.0	9.07	176.46	5,048.2	-1,174.2	72.6	1,176.5	2.00	-2.00	0.00
5,240.0	8.27	176.46	5,087.7	-1,180.2	72.9	1,182.5	2.00	-2.00	0.00
5,280.0	7.47	176.46	5,127.3	-1,185.7	73.3	1,188.0	2.00	-2.00	0.00
5,320.0	6.67	176.46	5,167.0	-1,190.6	73.6	1,192.9	2.00	-2.00	0.00
5,360.0	5.87	176.46	5,206.8	-1,195.0	73.9	1,197.3	2.00	-2.00	0.00
5,400.0	5.07	176.46	5,246.6	-1,198.8	74.1	1,201.1	2.00	-2.00	0.00
5,440.0	4.27	176.46	5,286.5	-1,202.0	74.3	1,204.3	2.00	-2.00	0.00
5,480.0	3.47	176.46	5,326.4	-1,204.7	74.5	1,207.0	2.00	-2.00	0.00
5,520.0	2.67	176.46	5,366.3	-1,206.9	74.6	1,209.2	2.00	-2.00	0.00
5,560.0	1.87	176.46	5,406.3	-1,208.5	74.7	1,210.8	2.00	-2.00	0.00
5,600.0	1.07	176.46	5,446.3	-1,209.5	74.8	1,211.8	2.00	-2.00	0.00
5,640.0	0.27	176.46	5,486.3	-1,210.0	74.8	1,212.3	2.00	-2.00	0.00
5,653.7	0.00	0.00	5,500.0	-1,210.0	74.8	1,212.3	2.00	-2.00	-1,286.93
<b>TARGET BHL 2569'FNL, 1322'FWL</b>									
5,680.0	0.00	0.00	5,526.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
5,720.0	0.00	0.00	5,566.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
5,760.0	0.00	0.00	5,606.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,646.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
5,840.0	0.00	0.00	5,686.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
5,880.0	0.00	0.00	5,726.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
5,920.0	0.00	0.00	5,766.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
5,960.0	0.00	0.00	5,806.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,846.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,040.0	0.00	0.00	5,886.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,080.0	0.00	0.00	5,926.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,120.0	0.00	0.00	5,966.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,160.0	0.00	0.00	6,006.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00



**Database:** Landmark  
**Company:** Synergy Resources  
**Project:** SEC.34-T4N-R68W  
**Site:** Margil 11-34D Pad Sec.34-T4N-R68W  
**Well:** Margil 34KD  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 34KD  
**TVD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Bulld Rate (°/100ft)	Turn Rate (°/100ft)
6,200.0	0.00	0.00	6,046.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,240.0	0.00	0.00	6,086.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,280.0	0.00	0.00	6,126.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,320.0	0.00	0.00	6,166.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,360.0	0.00	0.00	6,206.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,246.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,286.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,326.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,520.0	0.00	0.00	6,366.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,560.0	0.00	0.00	6,406.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,446.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,640.0	0.00	0.00	6,486.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,680.0	0.00	0.00	6,526.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,566.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,606.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,646.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,686.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,880.0	0.00	0.00	6,726.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,920.0	0.00	0.00	6,766.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
6,960.0	0.00	0.00	6,806.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,846.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,886.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,080.0	0.00	0.00	6,926.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,120.0	0.00	0.00	6,966.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,160.0	0.00	0.00	7,006.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,200.0	0.00	0.00	7,046.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,240.0	0.00	0.00	7,086.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,280.0	0.00	0.00	7,126.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,320.0	0.00	0.00	7,166.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,360.0	0.00	0.00	7,206.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,400.0	0.00	0.00	7,246.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,440.0	0.00	0.00	7,286.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,480.0	0.00	0.00	7,326.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,520.0	0.00	0.00	7,366.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,560.0	0.00	0.00	7,406.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,446.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,640.0	0.00	0.00	7,486.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,680.0	0.00	0.00	7,526.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,720.0	0.00	0.00	7,566.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,760.0	0.00	0.00	7,606.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,800.0	0.00	0.00	7,646.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,840.0	0.00	0.00	7,686.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,880.0	0.00	0.00	7,726.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,920.0	0.00	0.00	7,766.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,960.0	0.00	0.00	7,806.3	-1,210.0	74.8	1,212.3	0.00	0.00	0.00
7,973.7	0.00	0.00	7,820.0	-1,210.0	74.8	1,212.3	0.00	0.00	0.00

HARD LINES 75'S OF BHL

**Database:** Landmark  
**Company:** Synergy Resources  
**Project:** SEC.34-T4N-R68W  
**Site:** Margil 11-34D Pad Sec.34-T4N-R68W  
**Well:** Margil 34KD  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 34KD  
**TVD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### Targets

#### Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET BHL 2569'F - plan hits target center - Point	0.00	0.00	5,500.0	-1,210.0	74.8	1,341,615.41	3,141,211.84	40.270028	-104.993942
HARD LINES 75'S OF - plan misses target center by 125.0ft at 7973.7ft MD (7820.0 TVD, -1210.0 N, 74.8 E) - Polygon	0.00	0.00	7,820.0	-1,285.0	174.8	1,341,540.99	3,141,312.27	40.269822	-104.993584
Point 1			7,820.0	0.0	0.0	1,341,540.99	3,141,312.27		
Point 2			7,820.0	0.0	-200.0	1,341,539.85	3,141,112.28		

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
640.8	640.0	8 5/8"	8-5/8	12-1/4





## **Directional**

### **Synergy Resources**

**SEC.34-T4N-R68W**

**Margil 11-34D Pad Sec.34-T4N-R68W**

**Margil 34KD**

**Wellbore #1**

**Plan #1 (5-23-11)**

## **Anticollision Report**

**27 May, 2011**

<b>Company:</b>	Synergy Resources	<b>Local Co-ordinate Reference:</b>	Well Margil 34KD
<b>Project:</b>	SEC.34-T4N-R68W	<b>TVD Reference:</b>	WELL @ 5119.0ft (Original Well Elev)
<b>Reference Site:</b>	Margil 11-34D Pad Sec.34-T4N-R68W	<b>MD Reference:</b>	WELL @ 5119.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Margil 34KD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-23-11)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (5-23-11)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	Date 5/27/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	7,973.7	Plan #1 (5-23-11) (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						
Margil 11-34D Pad Sec.34-T4N-R68W						
Margil 22-34D - Wellbore #1 - Plan #1 (5-23-11)	300.0	300.0	20.0	18.9	17.838	CC, ES
Margil 22-34D - Wellbore #1 - Plan #1 (5-23-11)	500.0	499.8	26.7	24.7	13.502	SF

Offset Design Margil 11-34D Pad Sec.34-T4N-R68W - Margil 22-34D - Wellbore #1 - Plan #1 (5-23-11)													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-24.68	18.2	-8.4	20.0				
100.0	100.0	100.0	100.0	0.1	0.1	-24.68	18.2	-8.4	20.0	19.8	0.22	89.189	
200.0	200.0	200.0	200.0	0.3	0.3	-24.68	18.2	-8.4	20.0	19.4	0.67	29.730	
300.0	300.0	300.0	300.0	0.6	0.6	-24.68	18.2	-8.4	20.0	18.9	1.12	17.838	CC, ES
400.0	400.0	400.0	400.0	0.8	0.8	160.51	18.2	-8.4	21.7	20.1	1.55	13.969	
500.0	499.8	499.8	499.8	1.0	1.0	164.23	18.2	-8.4	26.7	24.7	1.98	13.502	SF
600.0	599.5	599.5	599.5	1.2	1.2	168.06	18.2	-8.4	35.1	32.7	2.41	14.566	
700.0	698.7	698.7	698.7	1.5	1.5	171.09	18.2	-8.4	47.1	44.3	2.86	16.498	
800.0	797.5	798.3	798.3	1.8	1.7	173.53	18.0	-8.1	62.3	59.0	3.29	18.926	
900.0	895.6	898.7	898.6	2.2	1.9	176.71	15.7	-5.4	78.8	75.1	3.70	21.283	
1,000.0	993.1	999.2	998.8	2.6	2.1	-179.65	11.2	-0.1	96.5	92.3	4.13	23.363	
1,065.2	1,056.1	1,064.6	1,064.0	2.9	2.2	-177.20	7.0	4.8	108.7	104.3	4.42	24.575	
1,100.0	1,089.7	1,099.6	1,098.7	3.1	2.3	-175.89	4.4	7.9	115.3	110.8	4.59	25.133	
1,200.0	1,186.2	1,200.4	1,198.5	3.6	2.5	-172.02	-4.7	18.6	133.2	128.1	5.11	26.078	
1,300.0	1,282.6	1,301.3	1,297.9	4.1	2.9	-167.93	-16.0	31.9	149.6	143.9	5.70	26.252	
1,400.0	1,379.1	1,402.3	1,396.7	4.6	3.2	-163.60	-29.7	48.0	164.9	158.5	6.39	25.621	
1,500.0	1,475.5	1,502.5	1,493.9	5.2	3.6	-159.03	-45.4	66.5	179.6	172.4	7.19	24.972	
1,600.0	1,572.0	1,600.5	1,588.6	5.7	4.1	-154.92	-61.5	85.5	194.7	186.7	8.08	24.110	
1,700.0	1,668.4	1,698.4	1,683.3	6.3	4.6	-151.41	-77.7	104.5	210.7	201.7	9.01	23.382	
1,800.0	1,764.9	1,796.3	1,778.0	6.8	5.0	-148.39	-93.8	123.5	227.4	217.4	9.98	22.780	
1,900.0	1,861.3	1,894.3	1,872.8	7.3	5.5	-145.79	-110.0	142.5	244.6	233.6	10.98	22.286	
2,000.0	1,957.8	1,992.2	1,967.5	7.9	6.0	-143.53	-126.1	161.5	262.3	250.3	11.99	21.882	
2,100.0	2,054.2	2,090.1	2,062.2	8.4	6.5	-141.55	-142.2	180.5	280.3	267.3	13.00	21.550	
2,200.0	2,150.7	2,188.1	2,156.9	9.0	7.1	-139.82	-158.4	199.5	298.5	284.5	14.03	21.277	
2,300.0	2,247.1	2,286.0	2,251.6	9.5	7.6	-138.28	-174.5	218.5	317.0	302.0	15.06	21.050	

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

**Company:** Synergy Resources  
**Project:** SEC.34-T4N-R68W  
**Reference Site:** Margill 11-34D Pad Sec.34-T4N-R68W  
**Site Error:** 0.0ft  
**Reference Well:** Margill 34KD  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margill 34KD  
**TVD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** Landmark  
**Offset TVD Reference:** Offset Datum

Offset Design Margill 11-34D Pad Sec.34-T4N-R68W - Margill 22-34D - Wellbore #1 - Plan #1 (5-23-11)													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
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	
2,400.0	2,343.6	2,383.9	2,346.3	10.1	8.1	-136.91	-190.7	237.5	335.8	319.7	16.10	20.860		
2,500.0	2,440.1	2,481.9	2,441.0	10.6	8.6	-135.69	-206.8	256.5	354.6	337.5	17.13	20.701		
2,600.0	2,536.5	2,579.8	2,535.7	11.2	9.1	-134.59	-222.9	275.5	373.6	355.5	18.17	20.567		
2,700.0	2,633.0	2,677.7	2,630.4	11.7	9.7	-133.60	-239.1	294.5	392.8	373.6	19.20	20.452		
2,800.0	2,729.4	2,775.7	2,725.1	12.3	10.2	-132.70	-255.2	313.5	412.0	391.8	20.24	20.355		
2,900.0	2,825.9	2,873.6	2,819.8	12.8	10.7	-131.87	-271.4	332.5	431.4	410.1	21.28	20.271		
3,000.0	2,922.3	2,971.5	2,914.5	13.4	11.3	-131.12	-287.5	351.5	450.8	428.4	22.32	20.198		
3,100.0	3,018.8	3,069.5	3,009.3	13.9	11.8	-130.44	-303.6	370.5	470.2	446.9	23.35	20.135		
3,200.0	3,115.2	3,167.4	3,104.0	14.5	12.3	-129.80	-319.8	389.5	489.8	465.4	24.39	20.080		
3,300.0	3,211.7	3,265.4	3,198.7	15.0	12.8	-129.22	-335.9	408.5	509.4	483.9	25.43	20.032		
3,400.0	3,308.1	3,363.3	3,293.4	15.6	13.4	-128.67	-352.1	427.5	529.0	502.5	26.46	19.990		
3,500.0	3,404.6	3,461.2	3,388.1	16.1	13.9	-128.17	-368.2	446.5	548.7	521.2	27.50	19.953		
3,600.0	3,501.0	3,559.2	3,482.8	16.7	14.4	-127.70	-384.3	465.5	568.4	539.9	28.53	19.920		
3,700.0	3,597.5	3,657.1	3,577.5	17.2	15.0	-127.27	-400.5	484.5	588.2	558.6	29.57	19.891		
3,800.0	3,694.0	3,755.0	3,672.2	17.8	15.5	-126.86	-416.6	503.5	607.9	577.3	30.60	19.865		
3,900.0	3,790.4	3,853.0	3,768.9	18.3	16.1	-126.47	-432.8	522.5	627.7	596.1	31.64	19.842		
4,000.0	3,886.9	3,950.9	3,861.6	18.9	16.6	-126.11	-448.9	541.5	647.6	614.9	32.67	19.821		
4,100.0	3,983.3	4,048.8	3,956.3	19.5	17.1	-125.78	-465.1	560.5	667.4	633.7	33.70	19.802		
4,200.0	4,079.8	4,146.8	4,051.0	20.0	17.7	-125.46	-481.2	579.5	687.3	652.6	34.74	19.786		
4,300.0	4,176.2	4,244.7	4,145.7	20.6	18.2	-125.16	-497.3	598.5	707.2	671.4	35.77	19.771		
4,400.0	4,272.7	4,342.6	4,240.5	21.1	18.7	-124.87	-513.5	617.5	727.1	690.3	36.80	19.757		
4,500.0	4,369.1	4,440.6	4,335.2	21.7	19.3	-124.60	-529.6	636.5	747.1	709.2	37.84	19.745		
4,600.0	4,465.6	4,538.5	4,429.9	22.2	19.8	-124.35	-545.8	655.5	767.0	728.2	38.87	19.734		
4,700.0	4,562.0	4,639.4	4,527.6	22.8	20.3	-124.14	-562.0	674.6	786.9	747.0	39.83	19.755		
4,800.0	4,658.5	4,742.9	4,628.6	23.3	20.7	-124.18	-576.6	691.7	806.1	765.5	40.68	19.819		
4,888.5	4,743.9	4,834.6	4,718.8	23.8	21.0	-124.43	-587.5	704.6	822.6	781.3	41.36	19.889		
4,900.0	4,755.0	4,846.5	4,730.5	23.9	21.0	-124.51	-588.7	706.1	824.7	783.3	41.44	19.901		
5,000.0	4,851.9	4,950.3	4,833.2	24.2	21.3	-125.20	-598.6	717.6	841.5	799.5	42.04	20.018		
5,100.0	4,949.7	5,054.3	4,936.6	24.5	21.5	-125.88	-606.0	726.3	855.8	813.2	42.55	20.113		
5,200.0	5,048.2	5,158.5	5,040.5	24.8	21.7	-126.55	-610.9	732.2	867.4	824.5	42.96	20.189		
5,300.0	5,147.2	5,262.8	5,144.6	25.1	21.8	-127.21	-613.5	735.2	876.5	833.2	43.29	20.247		
5,400.0	5,246.6	5,364.8	5,246.6	25.3	22.0	-127.84	-613.8	735.6	883.0	839.5	43.54	20.283		
5,500.0	5,346.4	5,464.5	5,346.4	25.5	22.1	-128.27	-613.8	735.6	887.4	843.7	43.75	20.283		
5,600.0	5,446.3	5,564.4	5,446.3	25.6	22.2	-128.49	-613.8	735.6	889.7	845.7	43.95	20.244		
5,653.7	5,500.0	5,618.1	5,500.0	25.6	22.2	47.94	-613.8	735.6	890.0	845.9	44.05	20.203		
5,700.0	5,546.3	5,664.4	5,546.3	25.7	22.3	47.94	-613.8	735.6	890.0	845.8	44.15	20.157		
5,800.0	5,646.3	5,764.4	5,646.3	25.8	22.4	47.94	-613.8	735.6	890.0	845.6	44.36	20.065		
5,900.0	5,746.3	5,864.4	5,746.3	25.8	22.5	47.94	-613.8	735.6	890.0	845.4	44.56	19.971		
6,000.0	5,846.3	5,964.4	5,846.3	25.9	22.6	47.94	-613.8	735.6	890.0	845.2	44.77	19.877		
6,100.0	5,946.3	6,064.4	5,946.3	26.0	22.7	47.94	-613.8	735.6	890.0	845.0	44.99	19.782		
6,200.0	6,046.3	6,164.4	6,046.3	26.1	22.8	47.94	-613.8	735.6	890.0	844.8	45.21	19.687		
6,300.0	6,146.3	6,264.4	6,146.3	26.2	22.9	47.94	-613.8	735.6	890.0	844.6	45.43	19.591		
6,400.0	6,246.3	6,364.4	6,246.3	26.3	23.1	47.94	-613.8	735.6	890.0	844.3	45.65	19.495		
6,500.0	6,346.3	6,464.4	6,346.3	26.4	23.2	47.94	-613.8	735.6	890.0	844.1	45.88	19.398		
6,600.0	6,446.3	6,564.4	6,446.3	26.5	23.3	47.94	-613.8	735.6	890.0	843.9	46.11	19.301		
6,700.0	6,546.3	6,664.4	6,546.3	26.5	23.4	47.94	-613.8	735.6	890.0	843.6	46.34	19.203		
6,800.0	6,646.3	6,764.4	6,646.3	26.6	23.5	47.94	-613.8	735.6	890.0	843.4	46.58	19.105		
6,900.0	6,746.3	6,864.4	6,746.3	26.7	23.7	47.94	-613.8	735.6	890.0	843.2	46.82	19.007		
7,000.0	6,846.3	6,964.4	6,846.3	26.8	23.8	47.94	-613.8	735.6	890.0	842.9	47.07	18.909		
7,100.0	6,946.3	7,064.4	6,946.3	26.9	23.9	47.94	-613.8	735.6	890.0	842.7	47.31	18.810		
7,200.0	7,046.3	7,164.4	7,046.3	27.0	24.1	47.94	-613.8	735.6	890.0	842.4	47.56	18.712		
7,300.0	7,146.3	7,264.4	7,146.3	27.2	24.2	47.94	-613.8	735.6	890.0	842.2	47.82	18.613		

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

**Company:** Synergy Resources  
**Project:** SEC.34-T4N-R68W  
**Reference Site:** Margil 11-34D Pad Sec.34-T4N-R68W  
**Site Error:** 0.0ft  
**Reference Well:** Margil 34KD  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 34KD  
**TVD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** Landmark  
**Offset TVD Reference:** Offset Datum

Offset Design Margil 11-34D Pad Sec.34-T4N-R68W - Margil 22-34D - Wellbore #1 - Plan #1 (5-23-11)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
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)	Offset Wellbore Centre +E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,400.0	7,246.3	7,364.4	7,246.3	27.3	24.3	47.94	-613.8	735.6	890.0	841.9	48.07	18.514		
7,500.0	7,346.3	7,464.4	7,346.3	27.4	24.5	47.94	-613.8	735.6	890.0	841.6	48.33	18.415		
7,600.0	7,446.3	7,564.4	7,446.3	27.5	24.6	47.94	-613.8	735.6	890.0	841.4	48.59	18.316		
7,700.0	7,546.3	7,664.4	7,546.3	27.6	24.7	47.94	-613.8	735.6	890.0	841.1	48.85	18.217		
7,800.0	7,646.3	7,764.4	7,646.3	27.7	24.9	47.94	-613.8	735.6	890.0	840.9	49.12	18.118		
7,900.0	7,746.3	7,864.4	7,746.3	27.8	25.0	47.94	-613.8	735.6	890.0	840.6	49.39	18.020		
7,973.7	7,820.0	7,938.1	7,820.0	27.9	25.1	47.94	-613.8	735.6	890.0	840.4	49.59	17.947		

**Company:** Synergy Resources  
**Project:** SEC.34-T4N-R68W  
**Reference Site:** Margil 11-34D Pad Sec.34-T4N-R68W  
**Site Error:** 0.0ft  
**Reference Well:** Margil 34KD  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 34KD  
**TVD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at:** 2.00 sigma  
**Database:** Landmark  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to WELL @ 5119.0ft (Original Well Elev) Coordinates are relative to: Margil 34KD

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: 0.33°



**Company:** Synergy Resources  
**Project:** SEC.34-T4N-R68W  
**Reference Site:** Margil 11-34D Pad Sec.34-T4N-R68W  
**Site Error:** 0.0ft  
**Reference Well:** Margil 34KD  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 34KD  
**TVD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5119.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** Landmark  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to WELL @ 5119.0ft (Original Well Elev) Coordinates are relative to: Margil 34KD

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.33°

