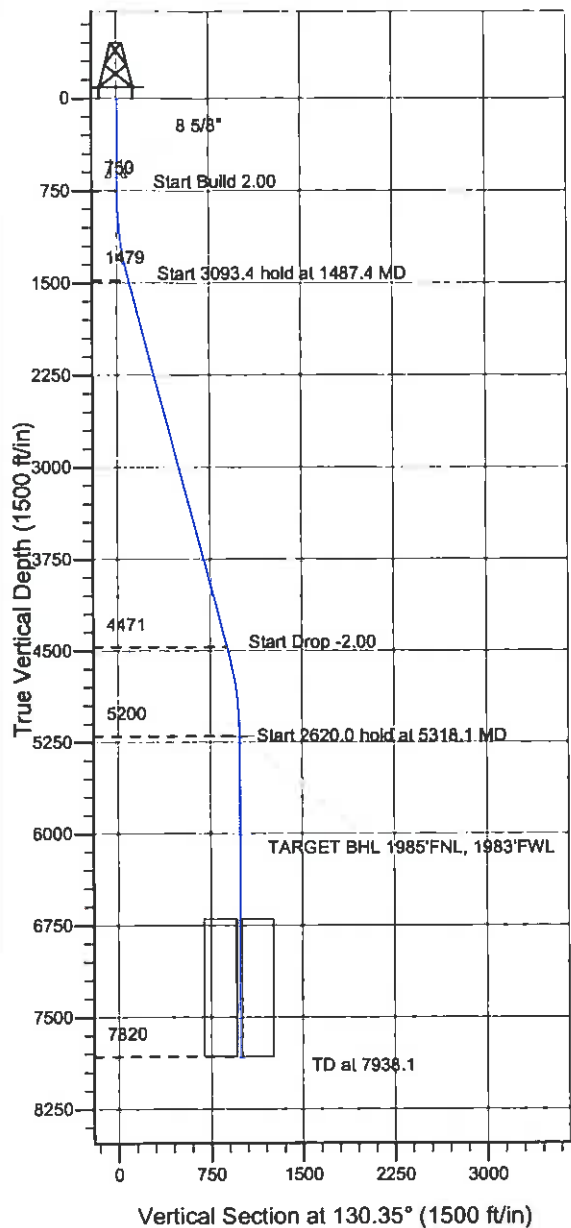


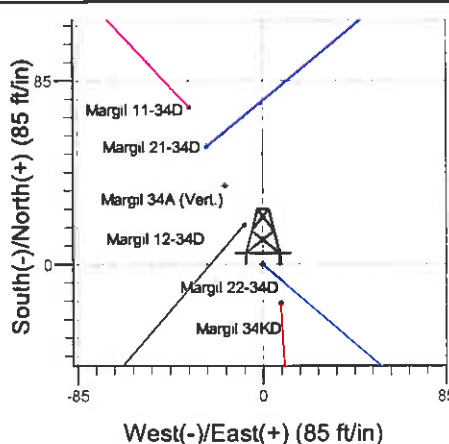
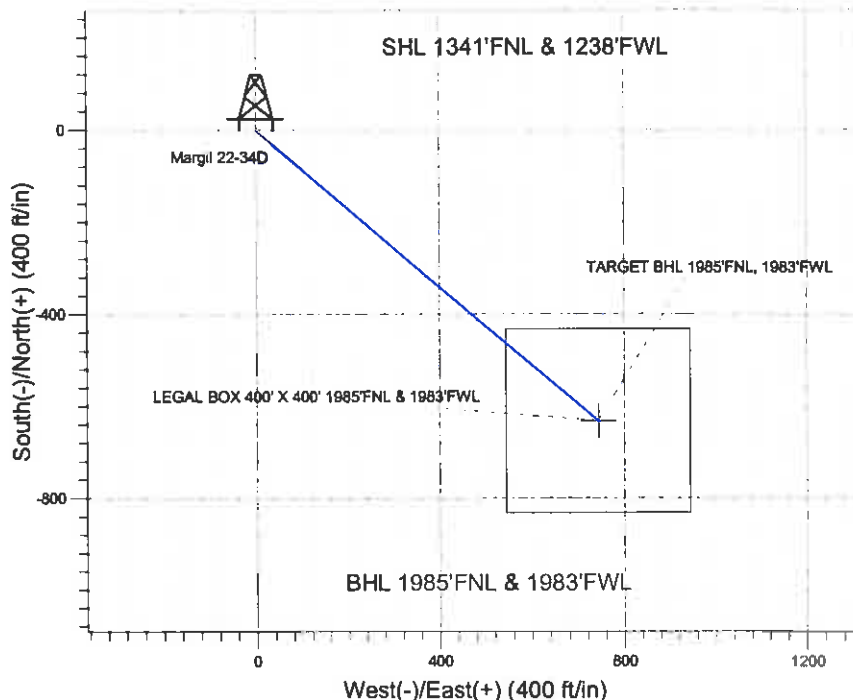
# ENSIGN Directional

## Well Name: Margil 22-34D

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 1342843.07 3141121.68 40.273399 -104.994240  
 Original Well Elev WELL @ 5119.0ft (Original Well Elev)



## Synergy Resources



Margil 11-34D Pad Sec.34-T4N-R68W  
 Margil 22-34D  
 Plan #1 (5-23-11)  
 8:01, 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 1985'FNL, 1983'FWL	5200.0	-632.0	743.9	40.271664	-104.991574	Point
LEGAL BOX 400' X 400' 1985'FNL & 1983'FWL	6700.0	-632.0	743.9	40.271664	-104.991574	Rectangle (Sides: L400.0 W400.0)

### 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	750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.0	
3	1487.4	14.75	130.35	1479.2	-61.1	71.9	2.00	130.35	94.4	
4	4580.8	14.75	130.35	4470.8	-570.9	672.0	0.00	0.00	881.8	
5	5318.1	0.00	0.00	5200.0	-632.0	743.9	2.00	180.00	976.2	TARGET BHL 1985'FNL, 1983'FWL
6	7938.1	0.00	0.00	7820.0	-632.0	743.9	0.00	0.00	976.2	



## **Directional**

### **Synergy Resources**

**SEC.34-T4N-R68W**

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

**Margil 22-34D**

**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 22-34D  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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>	Lat/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 22-34D			
<b>Well Position</b>	+N/-S	-72.9 ft	<b>Northing:</b>	1,342,843.07 ft
	+E/-W	33.8 ft	<b>Easting:</b>	3,141,121.68 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>	PLAN	<b>Tie On Depth:</b> 0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	130.35

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	
750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,487.4	14.75	130.35	1,479.2	-61.1	71.9	2.00	2.00	0.00	130.35	
4,580.8	14.75	130.35	4,470.8	-570.9	672.0	0.00	0.00	0.00	0.00	
5,318.1	0.00	0.00	5,200.0	-632.0	743.9	2.00	-2.00	0.00	180.00	TARGET BHL 1985
7,938.1	0.00	0.00	7,820.0	-632.0	743.9	0.00	0.00	0.00	0.00	

# **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 22-34D  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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)
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
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.20	130.35	760.0	0.0	0.0	0.0	2.00	2.00	0.00
800.0	1.00	130.35	800.0	-0.3	0.3	0.4	2.00	2.00	0.00
840.0	1.80	130.35	840.0	-0.9	1.1	1.4	2.00	2.00	0.00
880.0	2.60	130.35	880.0	-1.9	2.2	2.9	2.00	2.00	0.00
920.0	3.40	130.35	919.9	-3.3	3.8	5.0	2.00	2.00	0.00
960.0	4.20	130.35	959.8	-5.0	5.9	7.7	2.00	2.00	0.00
1,000.0	5.00	130.35	999.7	-7.1	8.3	10.9	2.00	2.00	0.00
1,040.0	5.80	130.35	1,039.5	-9.5	11.2	14.7	2.00	2.00	0.00
1,080.0	6.60	130.35	1,079.3	-12.3	14.5	19.0	2.00	2.00	0.00
1,120.0	7.40	130.35	1,119.0	-15.4	18.2	23.9	2.00	2.00	0.00
1,160.0	8.20	130.35	1,158.6	-19.0	22.3	29.3	2.00	2.00	0.00
1,200.0	9.00	130.35	1,198.2	-22.8	26.9	35.3	2.00	2.00	0.00
1,240.0	9.80	130.35	1,237.6	-27.1	31.9	41.8	2.00	2.00	0.00
1,280.0	10.60	130.35	1,277.0	-31.7	37.3	48.9	2.00	2.00	0.00
1,320.0	11.40	130.35	1,316.2	-36.6	43.1	56.5	2.00	2.00	0.00
1,360.0	12.20	130.35	1,355.4	-41.9	49.3	64.7	2.00	2.00	0.00
1,400.0	13.00	130.35	1,394.4	-47.5	56.0	73.4	2.00	2.00	0.00
1,440.0	13.80	130.35	1,433.3	-53.5	63.0	82.7	2.00	2.00	0.00
1,480.0	14.60	130.35	1,472.1	-59.9	70.5	92.5	2.00	2.00	0.00
1,487.4	14.75	130.35	1,479.2	-61.1	71.9	94.4	2.00	2.00	0.00
1,520.0	14.75	130.35	1,510.8	-66.5	78.3	102.7	0.00	0.00	0.00
1,560.0	14.75	130.35	1,549.5	-73.1	86.0	112.9	0.00	0.00	0.00
1,600.0	14.75	130.35	1,588.2	-79.7	93.8	123.0	0.00	0.00	0.00
1,640.0	14.75	130.35	1,626.9	-86.3	101.5	133.2	0.00	0.00	0.00
1,680.0	14.75	130.35	1,665.5	-92.9	109.3	143.4	0.00	0.00	0.00
1,720.0	14.75	130.35	1,704.2	-99.4	117.1	153.6	0.00	0.00	0.00
1,760.0	14.75	130.35	1,742.9	-106.0	124.8	163.8	0.00	0.00	0.00
1,800.0	14.75	130.35	1,781.6	-112.6	132.6	174.0	0.00	0.00	0.00
1,840.0	14.75	130.35	1,820.3	-119.2	140.3	184.1	0.00	0.00	0.00
1,880.0	14.75	130.35	1,859.0	-125.8	148.1	194.3	0.00	0.00	0.00
1,920.0	14.75	130.35	1,897.6	-132.4	155.9	204.5	0.00	0.00	0.00
1,960.0	14.75	130.35	1,936.3	-139.0	163.6	214.7	0.00	0.00	0.00
2,000.0	14.75	130.35	1,975.0	-145.6	171.4	224.9	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 22-34D  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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)
2,040.0	14.75	130.35	2,013.7	-152.2	179.1	235.0	0.00	0.00	0.00
2,080.0	14.75	130.35	2,052.4	-158.8	186.9	245.2	0.00	0.00	0.00
2,120.0	14.75	130.35	2,091.0	-165.4	194.6	255.4	0.00	0.00	0.00
2,160.0	14.75	130.35	2,129.7	-172.0	202.4	265.6	0.00	0.00	0.00
2,200.0	14.75	130.35	2,168.4	-178.6	210.2	275.8	0.00	0.00	0.00
2,240.0	14.75	130.35	2,207.1	-185.1	217.9	286.0	0.00	0.00	0.00
2,280.0	14.75	130.35	2,245.8	-191.7	225.7	296.1	0.00	0.00	0.00
2,320.0	14.75	130.35	2,284.5	-198.3	233.4	306.3	0.00	0.00	0.00
2,360.0	14.75	130.35	2,323.1	-204.9	241.2	316.5	0.00	0.00	0.00
2,400.0	14.75	130.35	2,361.8	-211.5	249.0	326.7	0.00	0.00	0.00
2,440.0	14.75	130.35	2,400.5	-218.1	256.7	336.9	0.00	0.00	0.00
2,480.0	14.75	130.35	2,439.2	-224.7	264.5	347.1	0.00	0.00	0.00
2,520.0	14.75	130.35	2,477.9	-231.3	272.2	357.2	0.00	0.00	0.00
2,560.0	14.75	130.35	2,516.6	-237.9	280.0	367.4	0.00	0.00	0.00
2,600.0	14.75	130.35	2,555.2	-244.5	287.8	377.6	0.00	0.00	0.00
2,640.0	14.75	130.35	2,593.9	-251.1	295.5	387.8	0.00	0.00	0.00
2,680.0	14.75	130.35	2,632.6	-257.7	303.3	398.0	0.00	0.00	0.00
2,720.0	14.75	130.35	2,671.3	-264.3	311.0	408.1	0.00	0.00	0.00
2,760.0	14.75	130.35	2,710.0	-270.9	318.8	418.3	0.00	0.00	0.00
2,800.0	14.75	130.35	2,748.6	-277.4	326.6	428.5	0.00	0.00	0.00
2,840.0	14.75	130.35	2,787.3	-284.0	334.3	438.7	0.00	0.00	0.00
2,880.0	14.75	130.35	2,826.0	-290.6	342.1	448.9	0.00	0.00	0.00
2,920.0	14.75	130.35	2,864.7	-297.2	349.8	459.1	0.00	0.00	0.00
2,960.0	14.75	130.35	2,903.4	-303.8	357.6	469.2	0.00	0.00	0.00
3,000.0	14.75	130.35	2,942.1	-310.4	365.4	479.4	0.00	0.00	0.00
3,040.0	14.75	130.35	2,980.7	-317.0	373.1	489.6	0.00	0.00	0.00
3,080.0	14.75	130.35	3,019.4	-323.6	380.9	499.8	0.00	0.00	0.00
3,120.0	14.75	130.35	3,058.1	-330.2	388.6	510.0	0.00	0.00	0.00
3,160.0	14.75	130.35	3,096.8	-336.8	396.4	520.1	0.00	0.00	0.00
3,200.0	14.75	130.35	3,135.5	-343.4	404.2	530.3	0.00	0.00	0.00
3,240.0	14.75	130.35	3,174.2	-350.0	411.9	540.5	0.00	0.00	0.00
3,280.0	14.75	130.35	3,212.8	-356.6	419.7	550.7	0.00	0.00	0.00
3,320.0	14.75	130.35	3,251.5	-363.1	427.4	560.9	0.00	0.00	0.00
3,360.0	14.75	130.35	3,290.2	-369.7	435.2	571.1	0.00	0.00	0.00
3,400.0	14.75	130.35	3,328.9	-376.3	443.0	581.2	0.00	0.00	0.00
3,440.0	14.75	130.35	3,367.6	-382.9	450.7	591.4	0.00	0.00	0.00
3,480.0	14.75	130.35	3,406.2	-389.5	458.5	601.6	0.00	0.00	0.00
3,520.0	14.75	130.35	3,444.9	-396.1	466.2	611.8	0.00	0.00	0.00
3,560.0	14.75	130.35	3,483.6	-402.7	474.0	622.0	0.00	0.00	0.00
3,600.0	14.75	130.35	3,522.3	-409.3	481.8	632.2	0.00	0.00	0.00
3,640.0	14.75	130.35	3,561.0	-415.9	489.5	642.3	0.00	0.00	0.00
3,680.0	14.75	130.35	3,599.7	-422.5	497.3	652.5	0.00	0.00	0.00
3,720.0	14.75	130.35	3,638.3	-429.1	505.0	662.7	0.00	0.00	0.00
3,760.0	14.75	130.35	3,677.0	-435.7	512.8	672.9	0.00	0.00	0.00
3,800.0	14.75	130.35	3,715.7	-442.3	520.6	683.1	0.00	0.00	0.00
3,840.0	14.75	130.35	3,754.4	-448.8	528.3	693.2	0.00	0.00	0.00
3,880.0	14.75	130.35	3,793.1	-455.4	536.1	703.4	0.00	0.00	0.00
3,920.0	14.75	130.35	3,831.8	-462.0	543.8	713.6	0.00	0.00	0.00
3,960.0	14.75	130.35	3,870.4	-468.6	551.6	723.8	0.00	0.00	0.00
4,000.0	14.75	130.35	3,909.1	-475.2	559.4	734.0	0.00	0.00	0.00
4,040.0	14.75	130.35	3,947.8	-481.8	567.1	744.2	0.00	0.00	0.00
4,080.0	14.75	130.35	3,986.5	-488.4	574.9	754.3	0.00	0.00	0.00
4,120.0	14.75	130.35	4,025.2	-495.0	582.6	764.5	0.00	0.00	0.00
4,160.0	14.75	130.35	4,063.8	-501.6	590.4	774.7	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 22-34D  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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)
4,200.0	14.75	130.35	4,102.5	-508.2	598.2	784.9	0.00	0.00	0.00
4,240.0	14.75	130.35	4,141.2	-514.8	605.9	795.1	0.00	0.00	0.00
4,280.0	14.75	130.35	4,179.9	-521.4	613.7	805.2	0.00	0.00	0.00
4,320.0	14.75	130.35	4,218.6	-528.0	621.4	815.4	0.00	0.00	0.00
4,360.0	14.75	130.35	4,257.3	-534.6	629.2	825.6	0.00	0.00	0.00
4,400.0	14.75	130.35	4,295.9	-541.1	637.0	835.8	0.00	0.00	0.00
4,440.0	14.75	130.35	4,334.6	-547.7	644.7	846.0	0.00	0.00	0.00
4,480.0	14.75	130.35	4,373.3	-554.3	652.5	856.2	0.00	0.00	0.00
4,520.0	14.75	130.35	4,412.0	-560.9	660.2	866.3	0.00	0.00	0.00
4,560.0	14.75	130.35	4,450.7	-567.5	668.0	876.5	0.00	0.00	0.00
4,580.8	14.75	130.35	4,470.8	-570.9	672.0	881.8	0.00	0.00	0.00
4,600.0	14.36	130.35	4,489.4	-574.1	675.7	886.6	2.00	-2.00	0.00
4,640.0	13.56	130.35	4,528.2	-580.3	683.1	896.3	2.00	-2.00	0.00
4,680.0	12.76	130.35	4,567.1	-586.2	690.0	905.4	2.00	-2.00	0.00
4,720.0	11.96	130.35	4,606.2	-591.8	696.5	914.0	2.00	-2.00	0.00
4,760.0	11.16	130.35	4,645.4	-596.9	702.6	922.0	2.00	-2.00	0.00
4,800.0	10.36	130.35	4,684.7	-601.8	708.3	929.5	2.00	-2.00	0.00
4,840.0	9.56	130.35	4,724.1	-606.3	713.6	936.4	2.00	-2.00	0.00
4,880.0	8.76	130.35	4,763.6	-610.4	718.5	942.7	2.00	-2.00	0.00
4,920.0	7.96	130.35	4,803.1	-614.2	722.9	948.6	2.00	-2.00	0.00
4,960.0	7.16	130.35	4,842.8	-617.6	726.9	953.8	2.00	-2.00	0.00
5,000.0	6.36	130.35	4,882.5	-620.6	730.5	958.5	2.00	-2.00	0.00
5,040.0	5.56	130.35	4,922.3	-623.3	733.7	962.7	2.00	-2.00	0.00
5,080.0	4.76	130.35	4,962.1	-625.6	736.4	966.3	2.00	-2.00	0.00
5,120.0	3.96	130.35	5,002.0	-627.6	738.7	969.3	2.00	-2.00	0.00
5,160.0	3.16	130.35	5,041.9	-629.2	740.6	971.8	2.00	-2.00	0.00
5,200.0	2.36	130.35	5,081.9	-630.5	742.1	973.7	2.00	-2.00	0.00
5,240.0	1.56	130.35	5,121.9	-631.4	743.1	975.1	2.00	-2.00	0.00
5,280.0	0.76	130.35	5,161.9	-631.9	743.8	975.9	2.00	-2.00	0.00
5,318.1	0.00	0.00	5,200.0	-632.0	743.9	976.2	2.00	-2.00	0.00
TARGET BHL 1985'FNL, 1983'FWL									
5,320.0	0.00	0.00	5,201.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,360.0	0.00	0.00	5,241.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,281.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,440.0	0.00	0.00	5,321.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,480.0	0.00	0.00	5,361.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,520.0	0.00	0.00	5,401.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,560.0	0.00	0.00	5,441.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,481.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,640.0	0.00	0.00	5,521.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,680.0	0.00	0.00	5,561.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,720.0	0.00	0.00	5,601.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,760.0	0.00	0.00	5,641.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,681.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,840.0	0.00	0.00	5,721.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,880.0	0.00	0.00	5,761.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,920.0	0.00	0.00	5,801.9	-632.0	743.9	976.2	0.00	0.00	0.00
5,960.0	0.00	0.00	5,841.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,881.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,040.0	0.00	0.00	5,921.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,080.0	0.00	0.00	5,961.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,120.0	0.00	0.00	6,001.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,160.0	0.00	0.00	6,041.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,200.0	0.00	0.00	6,081.9	-632.0	743.9	976.2	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 22-34D  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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)
6,240.0	0.00	0.00	6,121.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,280.0	0.00	0.00	6,161.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,320.0	0.00	0.00	6,201.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,360.0	0.00	0.00	6,241.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,281.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,440.0	0.00	0.00	6,321.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,480.0	0.00	0.00	6,361.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,520.0	0.00	0.00	6,401.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,560.0	0.00	0.00	6,441.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,600.0	0.00	0.00	6,481.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,640.0	0.00	0.00	6,521.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,680.0	0.00	0.00	6,561.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,720.0	0.00	0.00	6,601.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,760.0	0.00	0.00	6,641.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,800.0	0.00	0.00	6,681.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,818.1	0.00	0.00	6,700.0	-632.0	743.9	976.2	0.00	0.00	0.00
LEGAL BOX 400' X 400' 1985'FNL & 1983'FWL									
6,840.0	0.00	0.00	6,721.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,880.0	0.00	0.00	6,761.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,920.0	0.00	0.00	6,801.9	-632.0	743.9	976.2	0.00	0.00	0.00
6,960.0	0.00	0.00	6,841.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,881.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,040.0	0.00	0.00	6,921.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,080.0	0.00	0.00	6,961.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,120.0	0.00	0.00	7,001.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,160.0	0.00	0.00	7,041.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,200.0	0.00	0.00	7,081.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,240.0	0.00	0.00	7,121.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,280.0	0.00	0.00	7,161.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,320.0	0.00	0.00	7,201.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,360.0	0.00	0.00	7,241.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,400.0	0.00	0.00	7,281.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,440.0	0.00	0.00	7,321.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,480.0	0.00	0.00	7,361.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,520.0	0.00	0.00	7,401.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,560.0	0.00	0.00	7,441.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,600.0	0.00	0.00	7,481.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,640.0	0.00	0.00	7,521.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,680.0	0.00	0.00	7,561.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,720.0	0.00	0.00	7,601.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,760.0	0.00	0.00	7,641.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,800.0	0.00	0.00	7,681.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,840.0	0.00	0.00	7,721.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,880.0	0.00	0.00	7,761.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,920.0	0.00	0.00	7,801.9	-632.0	743.9	976.2	0.00	0.00	0.00
7,938.1	0.00	0.00	7,820.0	-632.0	743.9	976.2	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 22-34D  
**Wellbore:** Wellbore #1  
**Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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
LEGAL BOX 400' X 400'	0.00	0.00	6,700.0	-632.0	743.9	1,342,215.36	3,141,869.14	40.271664	-104.991574
- plan misses target center by 0.1ft at 6818.1ft MD (6700.0 TVD, -632.0 N, 743.9 E) - Rectangle (sides W400.0 H400.0 D1,120.0)									
TARGET BHL 1985'F	0.00	0.00	5,200.0	-632.0	743.9	1,342,215.32	3,141,869.19	40.271664	-104.991574
- plan hits target center - Point									

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
640.0	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 22-34D**

**Wellbore #1**

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

## **Anticollision Report**

**27 May, 2011**

**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 22-34D  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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

<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>	<b>Date</b> 5/27/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	7,938.1	Plan #1 (5-23-11) (Wellbore #1)	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
Offset Well - Wellbore - Design						
Margil 11-34D Pad Sec.34-T4N-R68W						
Margil 12-34D - Wellbore #1 - Plan #1 (5-23-11)	750.0	749.0	20.1	16.9	6.376	CC, ES
Margil 12-34D - Wellbore #1 - Plan #1 (5-23-11)	800.0	799.0	20.4	17.1	6.089	SF
Margil 34KD - Wellbore #1 - Plan #1 (5-23-11)	300.0	300.0	20.0	18.9	17.838	CC, ES
Margil 34KD - Wellbore #1 - Plan #1 (5-23-11)	500.0	498.4	26.6	24.7	13.517	SF

<b>Offset Design</b> Margil 11-34D Pad Sec.34-T4N-R68W - Margil 12-34D - Wellbore #1 - Plan #1 (5-23-11)											
Survey Program: 0-MWD											
<b>Reference</b>	<b>Offset</b>	<b>Semi Major Axis</b>		<b>Distance</b>		<b>Minimum Separation</b>		<b>Separation Factor</b>	<b>Warning</b>		
<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Reference (ft)</b>	<b>Offset (ft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N-S (ft)</b>	<b>+E-W (ft)</b>	<b>Between Centres (ft)</b>	<b>Between Ellipses (ft)</b>	
0.0	0.0	0.0	0.0	0.0	0.0	-24.68	18.2	-8.4	20.1		
100.0	100.0	99.0	99.0	0.1	0.1	-24.68	18.2	-8.4	20.1	19.8	0.22 89.654
200.0	200.0	199.0	199.0	0.3	0.3	-24.68	18.2	-8.4	20.1	19.4	0.67 29.835
300.0	300.0	299.0	299.0	0.6	0.6	-24.68	18.2	-8.4	20.1	18.9	1.12 17.877
400.0	400.0	399.0	399.0	0.8	0.8	-24.68	18.2	-8.4	20.1	18.5	1.57 12.762
500.0	500.0	499.0	499.0	1.0	1.0	-24.68	18.2	-8.4	20.1	18.0	2.02 9.923
600.0	600.0	599.0	599.0	1.2	1.2	-24.68	18.2	-8.4	20.1	17.6	2.47 8.117
700.0	700.0	699.0	699.0	1.5	1.5	-24.68	18.2	-8.4	20.1	17.1	2.92 6.867
750.0	750.0	749.0	749.0	1.6	1.6	-24.68	18.2	-8.4	20.1	16.9	3.14 6.376 CC, ES
800.0	800.0	799.0	799.0	1.7	1.7	-155.54	18.2	-8.4	20.4	17.1	3.36 6.089 SF
900.0	899.9	898.9	898.9	1.9	1.9	-159.02	18.2	-8.4	23.7	19.9	3.77 6.282
1,000.0	999.7	998.8	998.8	2.1	2.1	-164.48	17.9	-8.6	30.2	26.0	4.17 7.234
1,100.0	1,099.1	1,098.4	1,098.4	2.3	2.3	-173.29	15.3	-10.9	39.8	35.3	4.54 8.760
1,200.0	1,198.2	1,197.3	1,197.0	2.5	2.5	177.61	10.1	-15.3	53.5	48.6	4.93 10.848
1,300.0	1,296.6	1,295.0	1,294.1	2.9	2.7	169.95	2.4	-21.8	71.9	66.6	5.35 13.446
1,400.0	1,394.4	1,391.2	1,389.5	3.2	2.9	163.95	-7.6	-30.4	95.2	89.4	5.80 16.403
1,487.4	1,479.2	1,473.9	1,470.9	3.6	3.2	159.84	-18.1	-39.4	119.5	113.3	6.24 19.139
1,500.0	1,491.5	1,485.7	1,482.6	3.6	3.2	159.35	-19.8	-40.8	123.3	117.0	6.31 19.532
1,600.0	1,588.2	1,578.7	1,573.7	4.1	3.5	155.67	-34.1	-52.9	154.2	147.3	6.90 22.358
1,700.0	1,684.9	1,670.4	1,662.8	4.6	3.8	152.37	-50.3	-66.8	186.9	179.4	7.54 24.789
1,800.0	1,781.6	1,763.2	1,752.5	5.1	4.2	149.49	-68.4	-82.2	221.1	212.9	8.23 26.847
1,900.0	1,878.3	1,856.6	1,842.8	5.6	4.6	147.35	-86.7	-97.8	255.7	246.7	8.95 28.553
2,000.0	1,875.0	1,850.1	1,833.1	6.1	5.1	145.71	-104.9	-113.4	290.5	280.8	9.69 29.965

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 22-34D  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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 12-34D - Wellbore #1 - Plan #1 (5-23-11)													Offset Site Error:	0.0 ft
Survey Program: 0-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	
2,100.0	2,071.7	2,043.5	2,023.4	6.6	5.5	144.42	-123.2	-128.9	325.5	315.1	10.45	31.153		
2,200.0	2,168.4	2,137.0	2,113.8	7.1	6.0	143.38	-141.5	-144.5	360.6	349.4	11.21	32.156		
2,300.0	2,265.1	2,230.4	2,204.1	7.6	8.5	142.52	-159.7	-160.1	395.8	383.8	11.99	33.011		
2,400.0	2,361.8	2,323.9	2,294.4	8.2	6.9	141.81	-178.0	-175.7	431.1	418.3	12.77	33.746		
2,500.0	2,458.5	2,417.3	2,384.7	8.7	7.4	141.20	-196.3	-191.2	466.4	452.8	13.56	34.383		
2,600.0	2,555.2	2,510.8	2,475.0	9.2	7.9	140.68	-214.5	-206.8	501.8	487.4	14.36	34.939		
2,700.0	2,651.9	2,604.2	2,565.3	9.8	8.4	140.23	-232.8	-222.4	537.1	522.0	15.16	35.428		
2,800.0	2,748.6	2,697.7	2,655.6	10.3	8.9	139.83	-251.1	-237.9	572.6	556.6	15.97	35.861		
2,900.0	2,845.4	2,791.1	2,746.0	10.9	9.4	139.48	-269.3	-253.5	608.0	591.2	16.77	36.245		
3,000.0	2,942.1	2,884.6	2,838.3	11.4	9.8	139.16	-287.6	-269.1	643.4	625.9	17.59	36.590		
3,100.0	3,038.8	2,978.0	2,928.6	11.9	10.3	138.88	-305.9	-284.7	678.9	660.5	18.40	36.900		
3,200.0	3,135.5	3,071.5	3,016.9	12.5	10.8	138.63	-324.1	-300.2	714.4	695.2	19.21	37.179		
3,300.0	3,232.2	3,164.9	3,107.2	13.0	11.3	138.40	-342.4	-315.8	749.9	729.9	20.03	37.433		
3,400.0	3,328.9	3,258.4	3,197.5	13.6	11.8	138.20	-360.7	-331.4	785.4	764.5	20.85	37.665		
3,500.0	3,425.6	3,351.8	3,287.9	14.1	12.3	138.01	-378.9	-346.9	820.9	799.2	21.67	37.876		
3,600.0	3,522.3	3,445.3	3,378.2	14.7	12.8	137.83	-397.2	-362.5	856.4	833.9	22.50	38.070		
3,700.0	3,619.0	3,538.7	3,468.5	15.2	13.3	137.67	-415.5	-378.1	891.9	868.6	23.32	38.249		
3,800.0	3,715.7	3,632.2	3,558.8	15.8	13.8	137.52	-433.7	-393.7	927.5	903.3	24.14	38.414		
3,900.0	3,812.4	3,725.6	3,649.1	16.3	14.3	137.39	-452.0	-409.2	963.0	938.0	24.97	38.566		
4,000.0	3,909.1	3,819.1	3,739.4	16.9	14.9	137.26	-470.3	-424.8	998.5	972.7	25.80	38.708		
4,100.0	4,005.8	3,912.5	3,829.7	17.4	15.4	137.14	-488.5	-440.4	1,034.1	1,007.4	26.62	38.839		
4,200.0	4,102.5	4,006.0	3,920.1	18.0	15.9	137.03	-506.8	-455.9	1,069.6	1,042.2	27.45	38.962		
4,300.0	4,199.2	4,099.4	4,010.4	18.5	16.4	136.93	-525.1	-471.5	1,105.2	1,076.9	28.28	39.077		
4,400.0	4,295.9	4,192.9	4,100.7	19.1	16.9	136.83	-543.3	-487.1	1,140.7	1,111.6	29.11	39.184		
4,500.0	4,392.6	4,286.3	4,191.0	19.6	17.4	136.74	-561.6	-502.7	1,176.3	1,146.3	29.94	39.285		
4,580.8	4,470.8	4,361.8	4,264.0	20.0	17.8	136.67	-578.3	-515.2	1,205.0	1,174.4	30.61	39.362		
4,600.0	4,489.4	4,386.7	4,288.1	20.1	17.9	136.75	-581.1	-519.3	1,211.7	1,180.9	30.80	39.345		
4,700.0	4,586.7	4,519.3	4,417.2	20.5	18.4	137.13	-603.9	-538.8	1,243.6	1,212.0	31.60	39.351		
4,800.0	4,684.7	4,655.5	4,551.2	20.9	18.8	137.50	-622.6	-554.7	1,270.1	1,237.8	32.33	39.289		
4,900.0	4,783.4	4,794.7	4,689.2	21.1	19.2	137.86	-636.7	-566.7	1,291.0	1,258.0	32.97	39.160		
5,000.0	4,882.5	4,936.2	4,830.1	21.4	19.4	138.21	-645.7	-574.4	1,306.1	1,272.6	33.50	38.986		
5,100.0	4,982.1	5,079.0	4,972.8	21.6	19.7	138.56	-649.4	-577.6	1,315.4	1,281.5	33.94	38.754		
5,200.0	5,081.9	5,187.1	5,080.9	21.8	19.8	138.80	-649.5	-577.6	1,319.9	1,285.6	34.26	38.521		
5,300.0	5,181.9	5,287.1	5,180.9	21.9	19.9	138.89	-649.5	-577.6	1,321.7	1,287.1	34.52	38.285		
5,318.1	5,200.0	5,305.2	5,199.0	21.9	19.9	-90.76	-649.5	-577.6	1,321.7	1,287.1	34.56	38.238		
5,400.0	5,281.9	5,387.1	5,280.9	22.0	20.0	-90.76	-649.5	-577.6	1,321.7	1,286.9	34.77	38.011		
5,500.0	5,381.9	5,487.1	5,380.9	22.1	20.1	-90.76	-649.5	-577.6	1,321.7	1,286.7	35.02	37.741		
5,600.0	5,481.9	5,587.1	5,480.9	22.2	20.2	-90.76	-649.5	-577.6	1,321.7	1,286.4	35.27	37.471		
5,700.0	5,581.9	5,687.1	5,580.9	22.3	20.3	-90.76	-649.5	-577.6	1,321.7	1,286.2	35.53	37.201		
5,800.0	5,681.9	5,787.1	5,680.9	22.4	20.4	-90.76	-649.5	-577.6	1,321.7	1,285.9	35.79	36.930		
5,900.0	5,781.9	5,887.1	5,780.9	22.5	20.6	-90.76	-649.5	-577.6	1,321.7	1,285.6	36.05	36.660		
6,000.0	5,881.9	5,987.1	5,880.9	22.6	20.7	-90.76	-649.5	-577.6	1,321.7	1,285.4	36.32	36.390		
6,100.0	5,981.9	6,087.1	5,980.9	22.7	20.8	-90.76	-649.5	-577.6	1,321.7	1,285.1	36.59	36.120		
6,200.0	6,081.9	6,187.1	6,080.9	22.9	20.9	-90.76	-649.5	-577.6	1,321.7	1,284.8	36.87	35.851		
6,300.0	6,181.9	6,287.1	6,180.9	23.0	21.1	-90.76	-649.5	-577.6	1,321.7	1,284.6	37.14	35.583		
6,400.0	6,281.9	6,387.1	6,280.9	23.1	21.2	-90.76	-649.5	-577.6	1,321.7	1,284.3	37.43	35.315		
6,500.0	6,381.9	6,487.1	6,380.9	23.2	21.3	-90.76	-649.5	-577.6	1,321.7	1,284.0	37.71	35.049		
6,600.0	6,481.9	6,587.1	6,480.9	23.3	21.4	-90.76	-649.5	-577.6	1,321.7	1,283.7	38.00	34.783		
6,700.0	6,581.9	6,687.1	6,580.9	23.5	21.6	-90.76	-649.5	-577.6	1,321.7	1,283.4	38.29	34.519		
6,800.0	6,681.9	6,787.1	6,680.9	23.6	21.7	-90.76	-649.5	-577.6	1,321.7	1,283.1	38.58	34.256		
6,900.0	6,781.9	6,887.1	6,780.9	23.7	21.8	-90.76	-649.5	-577.6	1,321.7	1,282.8	38.88	33.995		
7,000.0	6,881.9	6,987.1	6,880.9	23.8	22.0	-90.76	-649.5	-577.6	1,321.7	1,282.5	39.18	33.734		

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 22-34D  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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 12-34D - Wellbore #1 - Plan #1 (5-23-11)													Offset Site Error:	0.0 ft
Survey Program: D-MWD													Offset Well Error:	0.0 ft
Reference	Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
7,100.0	6,981.9	7,087.1	6,980.9	24.0	22.1	-90.76	-649.5	-577.6	1,321.7	1,282.2	39.48	33.476		
7,200.0	7,081.9	7,187.1	7,080.9	24.1	22.3	-90.76	-649.5	-577.6	1,321.7	1,281.9	39.79	33.219		
7,300.0	7,181.9	7,287.1	7,180.9	24.2	22.4	-90.76	-649.5	-577.6	1,321.7	1,281.6	40.10	32.983		
7,400.0	7,281.9	7,387.1	7,280.9	24.4	22.5	-90.76	-649.5	-577.6	1,321.7	1,281.3	40.41	32.710		
7,500.0	7,381.9	7,487.1	7,380.9	24.5	22.7	-90.76	-649.5	-577.6	1,321.7	1,281.0	40.72	32.458		
7,600.0	7,481.9	7,587.1	7,480.9	24.6	22.8	-90.76	-649.5	-577.6	1,321.7	1,280.7	41.04	32.208		
7,700.0	7,581.9	7,687.1	7,580.9	24.8	23.0	-90.76	-649.5	-577.6	1,321.7	1,280.3	41.35	31.960		
7,800.0	7,681.9	7,787.1	7,680.9	24.9	23.1	-90.76	-649.5	-577.6	1,321.7	1,280.0	41.68	31.714		
7,900.0	7,781.9	7,887.1	7,780.9	25.1	23.3	-90.76	-649.5	-577.6	1,321.7	1,279.7	42.00	31.470		
7,938.1	7,820.0	7,925.2	7,819.0	25.1	23.3	-90.76	-649.5	-577.6	1,321.7	1,279.6	42.12	31.376		

**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 22-34D  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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

Margil 11-34D Pad Sec.34-T4N-R68W - Margil 34KD - Wellbore #1 - Plan #1 (5-23-11)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	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)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	155.32	-18.2	8.4	20.0					
100.0	100.0	100.0	100.0	0.1	0.1	155.32	-18.2	8.4	20.0	19.8	0.22	89.189		
200.0	200.0	200.0	200.0	0.3	0.3	155.32	-18.2	8.4	20.0	19.4	0.67	29.730		
300.0	300.0	300.0	300.0	0.6	0.6	155.32	-18.2	8.4	20.0	18.9	1.12	17.838 CC, ES		
400.0	400.0	399.3	399.3	0.8	0.8	156.96	-19.9	8.5	21.7	20.1	1.55	14.002		
500.0	500.0	498.4	498.2	1.0	1.0	160.67	-25.1	8.8	26.6	24.7	1.97	13.517 SF		
600.0	600.0	597.0	596.5	1.2	1.2	164.48	-33.6	9.3	35.0	32.6	2.41	14.513		
700.0	700.0	694.9	693.6	1.5	1.4	167.50	-45.3	10.0	46.9	44.0	2.88	16.282		
750.0	750.0	743.5	741.7	1.6	1.6	168.69	-52.4	10.5	54.1	51.0	3.12	17.312		
800.0	800.0	791.9	789.5	1.7	1.8	39.49	-60.3	11.0	61.8	58.5	3.30	18.748		
900.0	899.9	888.2	884.1	1.9	2.1	42.42	-78.3	12.1	77.9	74.2	3.71	20.998		
1,000.0	999.7	983.7	977.2	2.1	2.5	45.74	-99.3	13.4	95.0	90.9	4.14	22.933		
1,100.0	1,099.1	1,078.8	1,069.3	2.3	3.0	49.15	-123.2	14.9	113.4	108.8	4.61	24.596		
1,200.0	1,198.2	1,176.9	1,163.9	2.5	3.5	52.77	-149.0	16.5	131.2	128.1	5.12	25.634		
1,300.0	1,296.6	1,275.0	1,258.5	2.9	4.0	56.57	-174.9	18.1	147.5	141.8	5.69	25.930		
1,400.0	1,394.4	1,373.2	1,353.2	3.2	4.5	60.62	-200.7	19.7	162.8	156.4	6.35	25.631		
1,487.4	1,479.2	1,458.8	1,435.8	3.6	5.0	64.36	-223.3	21.0	175.5	168.4	7.02	24.987		
1,500.0	1,491.5	1,471.2	1,447.7	3.6	5.0	64.95	-226.6	21.2	177.3	170.2	7.13	24.872		
1,600.0	1,588.2	1,569.1	1,542.2	4.1	5.5	69.17	-252.4	22.8	192.3	184.3	8.00	24.030		
1,700.0	1,684.9	1,667.1	1,636.7	4.6	6.1	72.77	-278.2	24.4	208.2	199.2	8.93	23.318		
1,800.0	1,781.6	1,765.0	1,731.1	5.1	6.6	75.86	-304.0	26.0	224.7	214.8	9.89	22.726		
1,900.0	1,878.3	1,862.9	1,825.6	5.6	7.1	78.52	-329.8	27.6	241.9	231.0	10.88	22.240		
2,000.0	1,975.0	1,960.9	1,920.0	6.1	7.7	80.83	-355.6	29.2	259.5	247.6	11.88	21.840		
2,100.0	2,071.7	2,058.8	2,014.5	6.6	8.2	82.84	-381.4	30.8	277.4	264.5	12.89	21.512		
2,200.0	2,168.4	2,156.7	2,109.0	7.1	8.7	84.62	-407.2	32.4	295.6	281.7	13.92	21.242		
2,300.0	2,265.1	2,254.7	2,203.4	7.6	9.3	86.18	-433.0	34.0	314.1	299.2	14.95	21.017		
2,400.0	2,361.8	2,352.6	2,297.9	8.2	9.8	87.57	-458.8	35.6	332.8	318.8	15.98	20.829		
2,500.0	2,458.5	2,450.5	2,392.4	8.7	10.4	88.82	-484.6	37.2	351.6	334.6	17.01	20.672		
2,600.0	2,555.2	2,548.5	2,486.8	9.2	10.9	89.94	-510.4	38.8	370.6	352.6	18.05	20.539		
2,700.0	2,651.9	2,646.4	2,581.3	9.8	11.4	90.95	-536.2	40.4	389.7	370.7	19.08	20.426		
2,800.0	2,748.6	2,744.4	2,675.7	10.3	12.0	91.86	-562.0	42.0	409.0	388.9	20.12	20.329		
2,900.0	2,845.4	2,842.3	2,770.2	10.9	12.5	92.69	-587.8	43.6	428.3	407.1	21.15	20.246		
3,000.0	2,942.1	2,940.2	2,864.7	11.4	13.1	93.48	-613.6	45.2	447.7	425.5	22.19	20.174		
3,100.0	3,038.8	3,038.2	2,959.1	11.9	13.6	94.15	-639.4	46.8	467.1	443.9	23.23	20.112		
3,200.0	3,135.5	3,136.1	3,053.6	12.5	14.1	94.80	-665.2	48.4	486.7	462.4	24.26	20.058		
3,300.0	3,232.2	3,234.0	3,148.0	13.0	14.7	95.39	-691.0	50.0	506.3	481.0	25.30	20.011		
3,400.0	3,328.9	3,332.0	3,242.5	13.6	15.2	95.94	-716.8	51.5	525.9	499.6	26.34	19.969		
3,500.0	3,425.6	3,429.9	3,337.0	14.1	15.8	96.45	-742.6	53.1	545.6	518.2	27.37	19.932		
3,600.0	3,522.3	3,527.8	3,431.4	14.7	16.3	96.92	-768.4	54.7	565.3	536.9	28.41	19.900		
3,700.0	3,619.0	3,625.8	3,525.9	15.2	16.8	97.36	-794.2	56.3	585.0	555.6	29.44	19.871		
3,800.0	3,715.7	3,723.7	3,620.4	15.8	17.4	97.77	-820.0	57.9	604.8	574.3	30.48	19.846		
3,900.0	3,812.4	3,821.6	3,714.8	16.3	17.9	98.16	-845.8	59.5	624.6	593.1	31.51	19.823		
4,000.0	3,909.1	3,919.6	3,809.3	16.9	18.5	98.52	-871.6	61.1	644.4	611.9	32.54	19.802		
4,100.0	4,005.8	4,017.5	3,903.7	17.4	19.0	98.87	-897.4	62.7	664.3	630.7	33.58	19.784		
4,200.0	4,102.5	4,115.4	3,998.2	18.0	19.5	99.19	-923.2	64.3	684.2	649.6	34.61	19.768		
4,300.0	4,199.2	4,213.4	4,092.7	18.5	20.1	99.49	-949.0	65.9	704.1	668.4	35.64	19.753		
4,400.0	4,295.9	4,311.3	4,187.1	19.1	20.6	99.78	-974.8	67.5	724.0	687.3	36.68	19.740		
4,500.0	4,392.6	4,409.2	4,281.6	19.6	21.2	100.05	-1,000.6	69.1	743.9	706.2	37.71	19.728		
4,580.8	4,470.8	4,488.3	4,357.9	20.0	21.6	100.26	-1,021.4	70.4	760.0	721.5	38.54	19.719		
4,600.0	4,489.4	4,507.2	4,376.0	20.1	21.7	100.38	-1,026.4	70.7	763.8	725.1	38.74	19.718		
4,700.0	4,586.7	4,605.2	4,470.6	20.5	22.2	100.84	-1,052.2	72.3	783.4	743.7	39.65	19.759		
4,800.0	4,684.7	4,703.4	4,565.3	20.9	22.8	101.03	-1,078.1	73.9	802.3	761.8	40.49	19.815		

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 22-34D  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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 34KD - Wellbore #1 - Plan #1 (5-23-11)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
4,900.0	4,783.4	4,801.5	4,660.0	21.1	23.3	100.98	-1,103.9	75.5	820.5	779.3	41.26	19.887		
5,000.0	4,882.5	4,901.8	4,756.7	21.4	23.9	100.68	-1,130.3	77.1	838.2	796.2	41.96	19.977		
5,100.0	4,982.1	5,020.5	4,871.9	21.6	24.3	100.14	-1,158.6	78.9	853.9	811.4	42.49	20.097		
5,200.0	5,081.9	5,140.5	4,989.5	21.8	24.7	99.56	-1,182.5	80.3	866.7	823.8	42.93	20.190		
5,300.0	5,181.9	5,261.7	5,109.2	21.9	25.0	98.93	-1,201.5	81.5	876.6	833.3	43.27	20.258		
5,318.1	5,200.0	5,283.8	5,131.1	21.9	25.0	-130.84	-1,204.4	81.7	878.0	834.7	43.32	20.267		
5,400.0	5,281.9	5,384.1	5,230.7	22.0	25.3	-131.41	-1,215.6	82.4	883.6	840.1	43.53	20.298		
5,500.0	5,381.9	5,507.4	5,353.7	22.1	25.5	-131.87	-1,224.5	82.9	888.1	844.3	43.77	20.288		
5,600.0	5,481.9	5,631.2	5,477.5	22.2	25.6	-132.05	-1,228.1	83.2	889.9	845.9	44.01	20.222		
5,700.0	5,581.9	5,735.6	5,581.9	22.3	25.7	-132.06	-1,228.2	83.2	890.0	845.8	44.22	20.124		
5,800.0	5,681.9	5,835.6	5,681.9	22.4	25.8	-132.06	-1,228.2	83.2	890.0	845.5	44.43	20.031		
5,900.0	5,781.9	5,935.6	5,781.9	22.5	25.9	-132.06	-1,228.2	83.2	890.0	845.3	44.64	19.938		
6,000.0	5,881.9	6,035.6	5,881.9	22.6	25.9	-132.06	-1,228.2	83.2	890.0	845.1	44.85	19.844		
6,100.0	5,981.9	6,135.6	5,981.9	22.7	26.0	-132.06	-1,228.2	83.2	890.0	844.9	45.07	19.749		
6,200.0	6,081.9	6,235.6	6,081.9	22.9	26.1	-132.06	-1,228.2	83.2	890.0	844.7	45.28	19.653		
6,300.0	6,181.9	6,335.6	6,181.9	23.0	26.2	-132.06	-1,228.2	83.2	890.0	844.5	45.51	19.557		
6,400.0	6,281.9	6,435.6	6,281.9	23.1	26.3	-132.06	-1,228.2	83.2	890.0	844.2	45.73	19.461		
6,500.0	6,381.9	6,535.6	6,381.9	23.2	26.4	-132.06	-1,228.2	83.2	890.0	844.0	45.96	19.364		
6,600.0	6,481.9	6,635.6	6,481.9	23.3	26.5	-132.06	-1,228.2	83.2	890.0	843.8	46.19	19.266		
6,700.0	6,581.9	6,735.6	6,581.9	23.5	26.6	-132.06	-1,228.2	83.2	890.0	843.5	46.43	19.169		
6,800.0	6,681.9	6,835.6	6,681.9	23.6	26.7	-132.06	-1,228.2	83.2	890.0	843.3	46.67	19.071		
6,900.0	6,781.9	6,935.6	6,781.9	23.7	26.8	-132.06	-1,228.2	83.2	890.0	843.1	46.91	18.972		
7,000.0	6,881.9	7,035.6	6,881.9	23.8	26.9	-132.06	-1,228.2	83.2	890.0	842.8	47.15	18.874		
7,100.0	6,981.9	7,135.6	6,981.9	24.0	27.0	-132.06	-1,228.2	83.2	890.0	842.6	47.40	18.775		
7,200.0	7,081.9	7,235.6	7,081.9	24.1	27.1	-132.06	-1,228.2	83.2	890.0	842.3	47.65	18.676		
7,300.0	7,181.9	7,335.6	7,181.9	24.2	27.2	-132.06	-1,228.2	83.2	890.0	842.1	47.91	18.578		
7,400.0	7,281.9	7,435.6	7,281.9	24.4	27.3	-132.06	-1,228.2	83.2	890.0	841.8	48.16	18.479		
7,500.0	7,381.9	7,535.6	7,381.9	24.5	27.4	-132.06	-1,228.2	83.2	890.0	841.6	48.42	18.380		
7,600.0	7,481.9	7,635.6	7,481.9	24.6	27.5	-132.06	-1,228.2	83.2	890.0	841.3	48.68	18.281		
7,700.0	7,581.9	7,735.6	7,581.9	24.8	27.6	-132.06	-1,228.2	83.2	890.0	841.0	48.95	18.182		
7,800.0	7,681.9	7,835.6	7,681.9	24.9	27.7	-132.06	-1,228.2	83.2	890.0	840.8	49.22	18.083		
7,900.0	7,781.9	7,935.6	7,781.9	25.1	27.8	-132.06	-1,228.2	83.2	890.0	840.5	49.49	17.985		
7,938.1	7,820.0	7,973.7	7,820.0	25.1	27.9	-132.06	-1,228.2	83.2	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 22-34D  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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

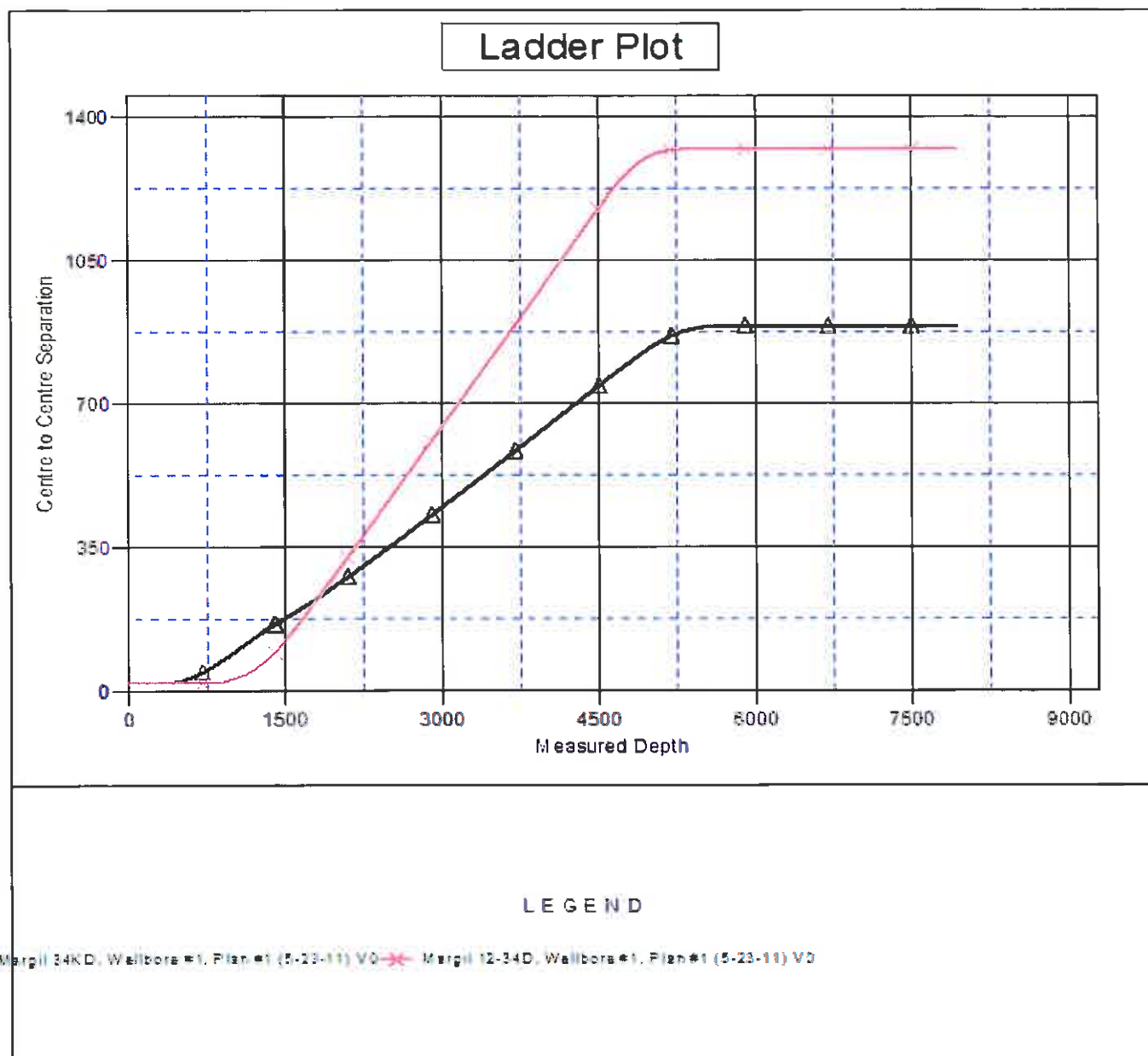
Reference Depths are relative to WELL @ 5119.0ft (Original Well Elev) Coordinates are relative to: Margil 22-34D

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°





**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 22-34D  
**Well Error:** 0.0ft  
**Reference Wellbore:** Wellbore #1  
**Reference Design:** Plan #1 (5-23-11)

**Local Co-ordinate Reference:** Well Margil 22-34D  
**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 22-34D

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°

