

# Whiting Oil & Gas

Well Name: **Razor 12-0141H**

Surface Location: Razor 12-0141H Pad Sec.12-T10N-R58W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4947.9

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1558479.43	3468486.86	40.854122	-103.806436	
(RKB - 16.5') WELL @ 4964.4ft ((RKB - 16.5'))						

Razor 12-0141H Pad Sec.12-T10N-R58W  
Razor 12-0141H  
Plan 4 Sidetrack 1(10-3-12)  
11:15, October 03 2012

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HARDLINES BHL 660'FNL	1.0	7049.0	-454.5	40.873469	-103.808079	Polygon
HARDLINES SHL 660'FSL	1.0	400.0	-398.6	40.855220	-103.807877	Polygon
SHL 2388'FNL & 662'FEL SEC 12	1.0	70.0	1.4	40.854314	-103.806431	Point
BHL 660'FNL, 660'FEL, SEC.1	5905.0	7048.9	-54.5	40.873469	-103.806633	Point

Azimuths to True North  
Magnetic North: 8.20°

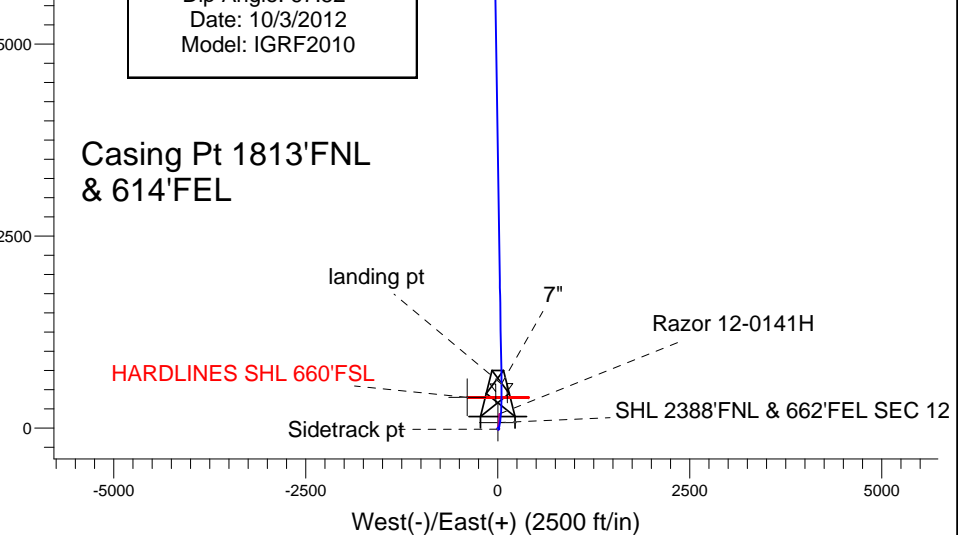
Magnetic Field  
Strength: 53327.3snT  
Dip Angle: 67.52°  
Date: 10/3/2012  
Model: IGRF2010

Razor 12-0141H  
HARDLINES BHL 660'FNL

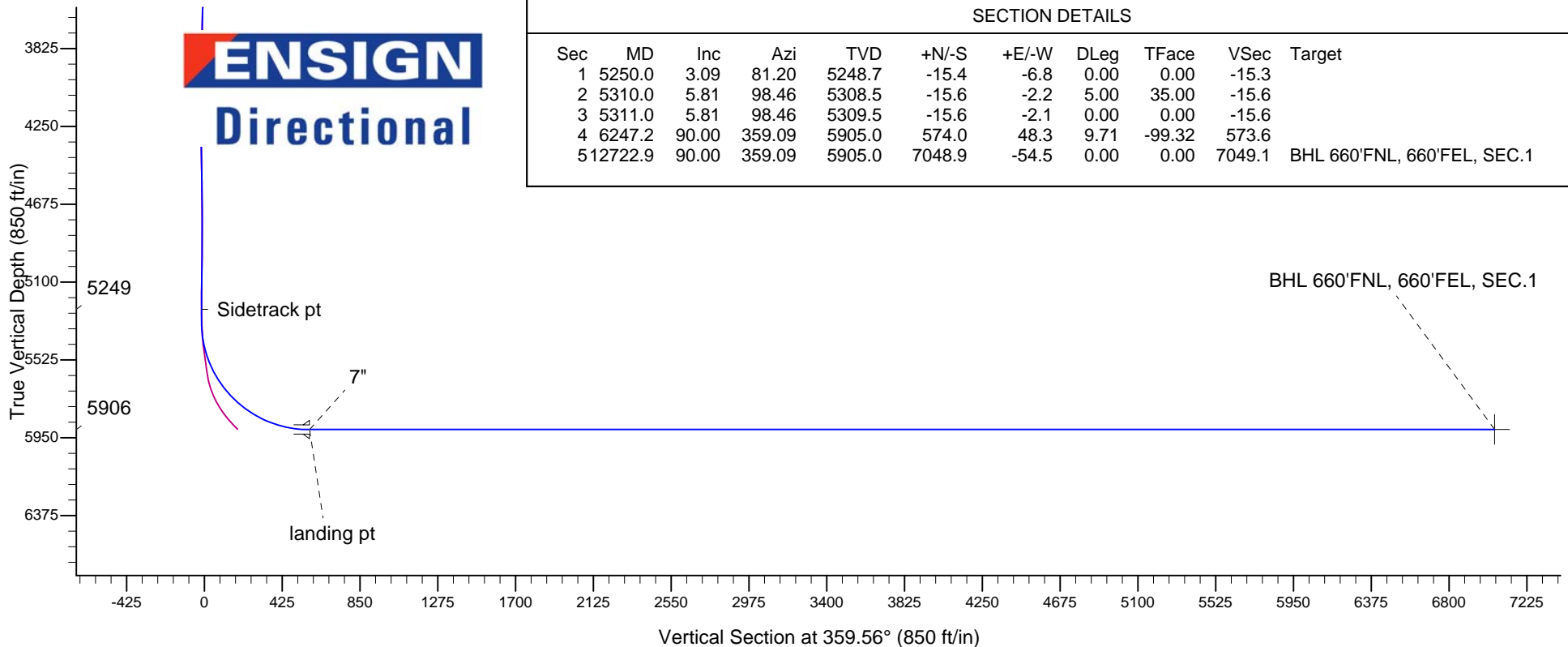
BHL 660'FNL, 660'FEL, SEC.1

Casing Pt 1813'FNL  
& 614'FEL

South(-)/North(+) (2500 ft/in)



**ENSIGN**  
Directional



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	5250.0	3.09	81.20	5248.7	-15.4	-6.8	0.00	0.00	-15.3	
2	5310.0	5.81	98.46	5308.5	-15.6	-2.2	5.00	35.00	-15.6	
3	5311.0	5.81	98.46	5309.5	-15.6	-2.1	0.00	0.00	-15.6	
4	6247.2	90.00	359.09	5905.0	574.0	48.3	9.71	-99.32	573.6	
5	12722.9	90.00	359.09	5905.0	7048.9	-54.5	0.00	0.00	7049.1	BHL 660'FNL, 660'FEL, SEC.1



## **Directional**

### **Whiting Oil & Gas**

**SEC.12-T10N-R58W**

**Razor 12-0141H Pad Sec.12-T10N-R58W**

**Razor 12-0141H**

**Wellbore #2**

**Plan: Plan 4 Sidetrack 1(10-3-12)**

### **Standard Planning Report**

**03 October, 2012**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Razor 12-0141H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Project:</b>	SEC.12-T10N-R58W	<b>MD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Site:</b>	Razor 12-0141H Pad Sec.12-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor 12-0141H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #2		
<b>Design:</b>	Plan 4 Sidetrack 1(10-3-12)		

<b>Project</b>	SEC.12-T10N-R58W, 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>Well</b>	Razor 12-0141H			
<b>Well Position</b>	<b>+N/-S</b>	-70.0 ft	<b>Northing:</b>	1,558,479.43 ft
	<b>+E/-W</b>	-1.4 ft	<b>Easting:</b>	3,468,486.86 ft
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft
			<b>Latitude:</b>	40.854122
			<b>Longitude:</b>	-103.806436
			<b>Ground Level:</b>	4,947.9 ft

<b>Wellbore</b>	Wellbore #2				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/3/2012	8.20	67.52	53,327

<b>Design</b>	Plan 4 Sidetrack 1(10-3-12)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	5,250.0
<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	359.56

<b>Plan Sections</b>										
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
5,250.0	3.09	81.20	5,248.7	-15.4	-6.8	0.00	0.00	0.00	0.00	
5,310.0	5.81	98.46	5,308.5	-15.6	-2.2	5.00	4.53	28.76	35.00	
5,311.0	5.81	98.46	5,309.5	-15.6	-2.1	0.00	0.00	0.00	0.00	
6,247.2	90.00	359.09	5,905.0	574.0	48.3	9.71	8.99	-10.61	-99.32	
12,722.9	90.00	359.09	5,905.0	7,048.9	-54.5	0.00	0.00	0.00	0.00	BHL 660'FNL, 660'F

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Razor 12-0141H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Project:</b>	SEC.12-T10N-R58W	<b>MD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Site:</b>	Razor 12-0141H Pad Sec.12-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor 12-0141H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #2		
<b>Design:</b>	Plan 4 Sidetrack 1(10-3-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,250.0	3.09	81.20	5,248.7	-15.4	-6.8	-15.3	0.00	0.00	0.00
<b>Sidetrack pt - SHL 2388'FNL &amp; 662'FEL SEC 12 - HARDLINES SHL 660'FSL</b>									
5,300.0	5.33	96.81	5,298.5	-15.4	-3.2	-15.4	5.00	4.49	31.22
5,310.0	5.81	98.46	5,308.5	-15.6	-2.2	-15.6	5.00	4.74	16.44
5,311.0	5.81	98.46	5,309.5	-15.6	-2.1	-15.6	0.00	0.00	0.00
5,350.0	6.40	62.63	5,348.3	-14.9	1.8	-14.9	9.71	1.51	-91.85
5,400.0	9.59	35.53	5,397.8	-10.2	6.7	-10.3	9.71	6.39	-54.20
5,450.0	13.79	23.24	5,446.7	-1.3	11.5	-1.4	9.71	8.39	-24.59
5,500.0	18.31	16.75	5,494.8	11.7	16.1	11.5	9.71	9.04	-12.97
5,550.0	22.96	12.79	5,541.6	28.7	20.5	28.5	9.71	9.31	-7.91
5,600.0	27.68	10.12	5,586.8	49.7	24.7	49.5	9.71	9.44	-5.35
5,650.0	32.44	8.17	5,630.0	74.4	28.6	74.2	9.71	9.52	-3.89
5,700.0	37.23	6.68	5,671.0	102.7	32.3	102.4	9.71	9.56	-2.99
5,750.0	42.02	5.49	5,709.5	134.4	35.7	134.1	9.71	9.59	-2.39
5,800.0	46.83	4.49	5,745.2	169.3	38.7	169.0	9.71	9.61	-1.98
5,850.0	51.64	3.65	5,777.9	207.0	41.4	206.7	9.71	9.63	-1.69
5,900.0	56.46	2.90	5,807.2	247.4	43.7	247.1	9.71	9.64	-1.48
5,950.0	61.29	2.24	5,833.1	290.2	45.6	289.8	9.71	9.65	-1.33
6,000.0	66.12	1.64	5,855.2	335.0	47.1	334.6	9.71	9.65	-1.21
6,050.0	70.94	1.08	5,873.5	381.5	48.2	381.1	9.71	9.66	-1.12
6,100.0	75.77	0.55	5,887.8	429.3	48.9	429.0	9.71	9.66	-1.06
6,150.0	80.61	0.04	5,898.0	478.3	49.1	477.9	9.71	9.66	-1.01
6,200.0	85.44	359.55	5,904.1	527.9	49.0	527.5	9.71	9.66	-0.99
6,247.0	89.98	359.09	5,906.0	574.8	48.4	574.4	9.71	9.67	-0.97
<b>landing pt - 7"</b>									
6,247.2	90.00	359.09	5,905.0	574.0	48.3	573.6	9.71	9.67	-0.97
6,250.0	90.00	359.09	5,905.0	576.8	48.3	576.5	0.00	0.00	0.00
6,300.0	90.00	359.09	5,905.0	626.8	47.5	626.5	0.00	0.00	0.00
6,350.0	90.00	359.09	5,905.0	676.8	46.7	676.5	0.00	0.00	0.00
6,400.0	90.00	359.09	5,905.0	726.8	45.9	726.5	0.00	0.00	0.00
6,450.0	90.00	359.09	5,905.0	776.8	45.1	776.4	0.00	0.00	0.00
6,500.0	90.00	359.09	5,905.0	826.8	44.3	826.4	0.00	0.00	0.00
6,550.0	90.00	359.09	5,905.0	876.8	43.5	876.4	0.00	0.00	0.00
6,600.0	90.00	359.09	5,905.0	926.8	42.7	926.4	0.00	0.00	0.00
6,650.0	90.00	359.09	5,905.0	976.8	41.9	976.4	0.00	0.00	0.00
6,700.0	90.00	359.09	5,905.0	1,026.8	41.1	1,026.4	0.00	0.00	0.00
6,750.0	90.00	359.09	5,905.0	1,076.8	40.3	1,076.4	0.00	0.00	0.00
6,800.0	90.00	359.09	5,905.0	1,126.8	39.5	1,126.4	0.00	0.00	0.00
6,850.0	90.00	359.09	5,905.0	1,176.8	38.7	1,176.4	0.00	0.00	0.00
6,900.0	90.00	359.09	5,905.0	1,226.8	38.0	1,226.4	0.00	0.00	0.00
6,950.0	90.00	359.09	5,905.0	1,276.8	37.2	1,276.4	0.00	0.00	0.00
7,000.0	90.00	359.09	5,905.0	1,326.8	36.4	1,326.4	0.00	0.00	0.00
7,050.0	90.00	359.09	5,905.0	1,376.7	35.6	1,376.4	0.00	0.00	0.00
7,100.0	90.00	359.09	5,905.0	1,426.7	34.8	1,426.4	0.00	0.00	0.00
7,150.0	90.00	359.09	5,905.0	1,476.7	34.0	1,476.4	0.00	0.00	0.00
7,200.0	90.00	359.09	5,905.0	1,526.7	33.2	1,526.4	0.00	0.00	0.00
7,250.0	90.00	359.09	5,905.0	1,576.7	32.4	1,576.4	0.00	0.00	0.00
7,300.0	90.00	359.09	5,905.0	1,626.7	31.6	1,626.4	0.00	0.00	0.00
7,350.0	90.00	359.09	5,905.0	1,676.7	30.8	1,676.4	0.00	0.00	0.00
7,400.0	90.00	359.09	5,905.0	1,726.7	30.0	1,726.4	0.00	0.00	0.00
7,450.0	90.00	359.09	5,905.0	1,776.7	29.2	1,776.4	0.00	0.00	0.00
7,500.0	90.00	359.09	5,905.0	1,826.7	28.4	1,826.4	0.00	0.00	0.00
7,550.0	90.00	359.09	5,905.0	1,876.7	27.6	1,876.4	0.00	0.00	0.00
7,600.0	90.00	359.09	5,905.0	1,926.7	26.8	1,926.4	0.00	0.00	0.00

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<b>Wellbore:</b>	Wellbore #2		
<b>Design:</b>	Plan 4 Sidetrack 1(10-3-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,650.0	90.00	359.09	5,905.0	1,976.7	26.0	1,976.4	0.00	0.00	0.00
7,700.0	90.00	359.09	5,905.0	2,026.7	25.3	2,026.4	0.00	0.00	0.00
7,750.0	90.00	359.09	5,905.0	2,076.7	24.5	2,076.4	0.00	0.00	0.00
7,800.0	90.00	359.09	5,905.0	2,126.7	23.7	2,126.4	0.00	0.00	0.00
7,850.0	90.00	359.09	5,905.0	2,176.6	22.9	2,176.4	0.00	0.00	0.00
7,900.0	90.00	359.09	5,905.0	2,226.6	22.1	2,226.4	0.00	0.00	0.00
7,950.0	90.00	359.09	5,905.0	2,276.6	21.3	2,276.4	0.00	0.00	0.00
8,000.0	90.00	359.09	5,905.0	2,326.6	20.5	2,326.4	0.00	0.00	0.00
8,050.0	90.00	359.09	5,905.0	2,376.6	19.7	2,376.4	0.00	0.00	0.00
8,100.0	90.00	359.09	5,905.0	2,426.6	18.9	2,426.4	0.00	0.00	0.00
8,150.0	90.00	359.09	5,905.0	2,476.6	18.1	2,476.4	0.00	0.00	0.00
8,200.0	90.00	359.09	5,905.0	2,526.6	17.3	2,526.4	0.00	0.00	0.00
8,250.0	90.00	359.09	5,905.0	2,576.6	16.5	2,576.4	0.00	0.00	0.00
8,300.0	90.00	359.09	5,905.0	2,626.6	15.7	2,626.4	0.00	0.00	0.00
8,350.0	90.00	359.09	5,905.0	2,676.6	14.9	2,676.4	0.00	0.00	0.00
8,400.0	90.00	359.09	5,905.0	2,726.6	14.1	2,726.4	0.00	0.00	0.00
8,450.0	90.00	359.09	5,905.0	2,776.6	13.3	2,776.4	0.00	0.00	0.00
8,500.0	90.00	359.09	5,905.0	2,826.6	12.6	2,826.4	0.00	0.00	0.00
8,550.0	90.00	359.09	5,905.0	2,876.6	11.8	2,876.4	0.00	0.00	0.00
8,600.0	90.00	359.09	5,905.0	2,926.6	11.0	2,926.4	0.00	0.00	0.00
8,650.0	90.00	359.09	5,905.0	2,976.5	10.2	2,976.4	0.00	0.00	0.00
8,700.0	90.00	359.09	5,905.0	3,026.5	9.4	3,026.4	0.00	0.00	0.00
8,750.0	90.00	359.09	5,905.0	3,076.5	8.6	3,076.4	0.00	0.00	0.00
8,800.0	90.00	359.09	5,905.0	3,126.5	7.8	3,126.4	0.00	0.00	0.00
8,850.0	90.00	359.09	5,905.0	3,176.5	7.0	3,176.4	0.00	0.00	0.00
8,900.0	90.00	359.09	5,905.0	3,226.5	6.2	3,226.4	0.00	0.00	0.00
8,950.0	90.00	359.09	5,905.0	3,276.5	5.4	3,276.4	0.00	0.00	0.00
9,000.0	90.00	359.09	5,905.0	3,326.5	4.6	3,326.4	0.00	0.00	0.00
9,050.0	90.00	359.09	5,905.0	3,376.5	3.8	3,376.4	0.00	0.00	0.00
9,100.0	90.00	359.09	5,905.0	3,426.5	3.0	3,426.4	0.00	0.00	0.00
9,150.0	90.00	359.09	5,905.0	3,476.5	2.2	3,476.4	0.00	0.00	0.00
9,200.0	90.00	359.09	5,905.0	3,526.5	1.4	3,526.4	0.00	0.00	0.00
9,250.0	90.00	359.09	5,905.0	3,576.5	0.6	3,576.4	0.00	0.00	0.00
9,300.0	90.00	359.09	5,905.0	3,626.5	-0.1	3,626.4	0.00	0.00	0.00
9,350.0	90.00	359.09	5,905.0	3,676.5	-0.9	3,676.4	0.00	0.00	0.00
9,400.0	90.00	359.09	5,905.0	3,726.4	-1.7	3,726.4	0.00	0.00	0.00
9,450.0	90.00	359.09	5,905.0	3,776.4	-2.5	3,776.4	0.00	0.00	0.00
9,500.0	90.00	359.09	5,905.0	3,826.4	-3.3	3,826.3	0.00	0.00	0.00
9,550.0	90.00	359.09	5,905.0	3,876.4	-4.1	3,876.3	0.00	0.00	0.00
9,600.0	90.00	359.09	5,905.0	3,926.4	-4.9	3,926.3	0.00	0.00	0.00
9,650.0	90.00	359.09	5,905.0	3,976.4	-5.7	3,976.3	0.00	0.00	0.00
9,700.0	90.00	359.09	5,905.0	4,026.4	-6.5	4,026.3	0.00	0.00	0.00
9,750.0	90.00	359.09	5,905.0	4,076.4	-7.3	4,076.3	0.00	0.00	0.00
9,800.0	90.00	359.09	5,905.0	4,126.4	-8.1	4,126.3	0.00	0.00	0.00
9,850.0	90.00	359.09	5,905.0	4,176.4	-8.9	4,176.3	0.00	0.00	0.00
9,900.0	90.00	359.09	5,905.0	4,226.4	-9.7	4,226.3	0.00	0.00	0.00
9,950.0	90.00	359.09	5,905.0	4,276.4	-10.5	4,276.3	0.00	0.00	0.00
10,000.0	90.00	359.09	5,905.0	4,326.4	-11.3	4,326.3	0.00	0.00	0.00
10,050.0	90.00	359.09	5,905.0	4,376.4	-12.1	4,376.3	0.00	0.00	0.00
10,100.0	90.00	359.09	5,905.0	4,426.4	-12.8	4,426.3	0.00	0.00	0.00
10,150.0	90.00	359.09	5,905.0	4,476.4	-13.6	4,476.3	0.00	0.00	0.00
10,200.0	90.00	359.09	5,905.0	4,526.3	-14.4	4,526.3	0.00	0.00	0.00
10,250.0	90.00	359.09	5,905.0	4,576.3	-15.2	4,576.3	0.00	0.00	0.00
10,300.0	90.00	359.09	5,905.0	4,626.3	-16.0	4,626.3	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Razor 12-0141H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Project:</b>	SEC.12-T10N-R58W	<b>MD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Site:</b>	Razor 12-0141H Pad Sec.12-T10N-R58W	<b>North Reference:</b>	True
<b>Well:</b>	Razor 12-0141H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #2		
<b>Design:</b>	Plan 4 Sidetrack 1(10-3-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,350.0	90.00	359.09	5,905.0	4,676.3	-16.8	4,676.3	0.00	0.00	0.00
10,400.0	90.00	359.09	5,905.0	4,726.3	-17.6	4,726.3	0.00	0.00	0.00
10,450.0	90.00	359.09	5,905.0	4,776.3	-18.4	4,776.3	0.00	0.00	0.00
10,500.0	90.00	359.09	5,905.0	4,826.3	-19.2	4,826.3	0.00	0.00	0.00
10,550.0	90.00	359.09	5,905.0	4,876.3	-20.0	4,876.3	0.00	0.00	0.00
10,600.0	90.00	359.09	5,905.0	4,926.3	-20.8	4,926.3	0.00	0.00	0.00
10,650.0	90.00	359.09	5,905.0	4,976.3	-21.6	4,976.3	0.00	0.00	0.00
10,700.0	90.00	359.09	5,905.0	5,026.3	-22.4	5,026.3	0.00	0.00	0.00
10,750.0	90.00	359.09	5,905.0	5,076.3	-23.2	5,076.3	0.00	0.00	0.00
10,800.0	90.00	359.09	5,905.0	5,126.3	-24.0	5,126.3	0.00	0.00	0.00
10,850.0	90.00	359.09	5,905.0	5,176.3	-24.8	5,176.3	0.00	0.00	0.00
10,900.0	90.00	359.09	5,905.0	5,226.3	-25.5	5,226.3	0.00	0.00	0.00
10,950.0	90.00	359.09	5,905.0	5,276.3	-26.3	5,276.3	0.00	0.00	0.00
11,000.0	90.00	359.09	5,905.0	5,326.2	-27.1	5,326.3	0.00	0.00	0.00
11,050.0	90.00	359.09	5,905.0	5,376.2	-27.9	5,376.3	0.00	0.00	0.00
11,100.0	90.00	359.09	5,905.0	5,426.2	-28.7	5,426.3	0.00	0.00	0.00
11,150.0	90.00	359.09	5,905.0	5,476.2	-29.5	5,476.3	0.00	0.00	0.00
11,200.0	90.00	359.09	5,905.0	5,526.2	-30.3	5,526.3	0.00	0.00	0.00
11,250.0	90.00	359.09	5,905.0	5,576.2	-31.1	5,576.3	0.00	0.00	0.00
11,300.0	90.00	359.09	5,905.0	5,626.2	-31.9	5,626.3	0.00	0.00	0.00
11,350.0	90.00	359.09	5,905.0	5,676.2	-32.7	5,676.3	0.00	0.00	0.00
11,400.0	90.00	359.09	5,905.0	5,726.2	-33.5	5,726.3	0.00	0.00	0.00
11,450.0	90.00	359.09	5,905.0	5,776.2	-34.3	5,776.3	0.00	0.00	0.00
11,500.0	90.00	359.09	5,905.0	5,826.2	-35.1	5,826.3	0.00	0.00	0.00
11,550.0	90.00	359.09	5,905.0	5,876.2	-35.9	5,876.3	0.00	0.00	0.00
11,600.0	90.00	359.09	5,905.0	5,926.2	-36.7	5,926.3	0.00	0.00	0.00
11,650.0	90.00	359.09	5,905.0	5,976.2	-37.5	5,976.3	0.00	0.00	0.00
11,700.0	90.00	359.09	5,905.0	6,026.2	-38.2	6,026.3	0.00	0.00	0.00
11,750.0	90.00	359.09	5,905.0	6,076.2	-39.0	6,076.3	0.00	0.00	0.00
11,800.0	90.00	359.09	5,905.0	6,126.1	-39.8	6,126.3	0.00	0.00	0.00
11,850.0	90.00	359.09	5,905.0	6,176.1	-40.6	6,176.3	0.00	0.00	0.00
11,900.0	90.00	359.09	5,905.0	6,226.1	-41.4	6,226.3	0.00	0.00	0.00
11,950.0	90.00	359.09	5,905.0	6,276.1	-42.2	6,276.3	0.00	0.00	0.00
12,000.0	90.00	359.09	5,905.0	6,326.1	-43.0	6,326.3	0.00	0.00	0.00
12,050.0	90.00	359.09	5,905.0	6,376.1	-43.8	6,376.3	0.00	0.00	0.00
12,100.0	90.00	359.09	5,905.0	6,426.1	-44.6	6,426.3	0.00	0.00	0.00
12,150.0	90.00	359.09	5,905.0	6,476.1	-45.4	6,476.3	0.00	0.00	0.00
12,200.0	90.00	359.09	5,905.0	6,526.1	-46.2	6,526.3	0.00	0.00	0.00
12,250.0	90.00	359.09	5,905.0	6,576.1	-47.0	6,576.3	0.00	0.00	0.00
12,300.0	90.00	359.09	5,905.0	6,626.1	-47.8	6,626.3	0.00	0.00	0.00
12,350.0	90.00	359.09	5,905.0	6,676.1	-48.6	6,676.3	0.00	0.00	0.00
12,400.0	90.00	359.09	5,905.0	6,726.1	-49.4	6,726.3	0.00	0.00	0.00
12,450.0	90.00	359.09	5,905.0	6,776.1	-50.2	6,776.3	0.00	0.00	0.00
12,500.0	90.00	359.09	5,905.0	6,826.1	-50.9	6,826.2	0.00	0.00	0.00
12,550.0	90.00	359.09	5,905.0	6,876.1	-51.7	6,876.2	0.00	0.00	0.00
12,600.0	90.00	359.09	5,905.0	6,926.0	-52.5	6,926.2	0.00	0.00	0.00
12,650.0	90.00	359.09	5,905.0	6,976.0	-53.3	6,976.2	0.00	0.00	0.00
12,700.0	90.00	359.09	5,905.0	7,026.0	-54.1	7,026.2	0.00	0.00	0.00
12,722.9	90.00	359.09	5,905.0	7,048.9	-54.5	7,049.1	0.00	0.00	0.00
HARDLINES BHL 660'FNL - BHL 660'FNL, 660'FEL, SEC.1									

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S (ft)	+E/-W (ft)	
	5,250.0	5,248.7	-15.4	-6.8	Sidetrack pt
	6,247.0	5,906.0	574.8	48.4	landing pt



## **Directional**

### **Whiting Oil & Gas**

**SEC.12-T10N-R58W**

**Razor 12-0141H Pad Sec.12-T10N-R58W**

**Razor 12-0141H**

**Wellbore #2**

**Plan 4 Sidetrack 1(10-3-12)**

### **Anticollision Report**

**03 October, 2012**

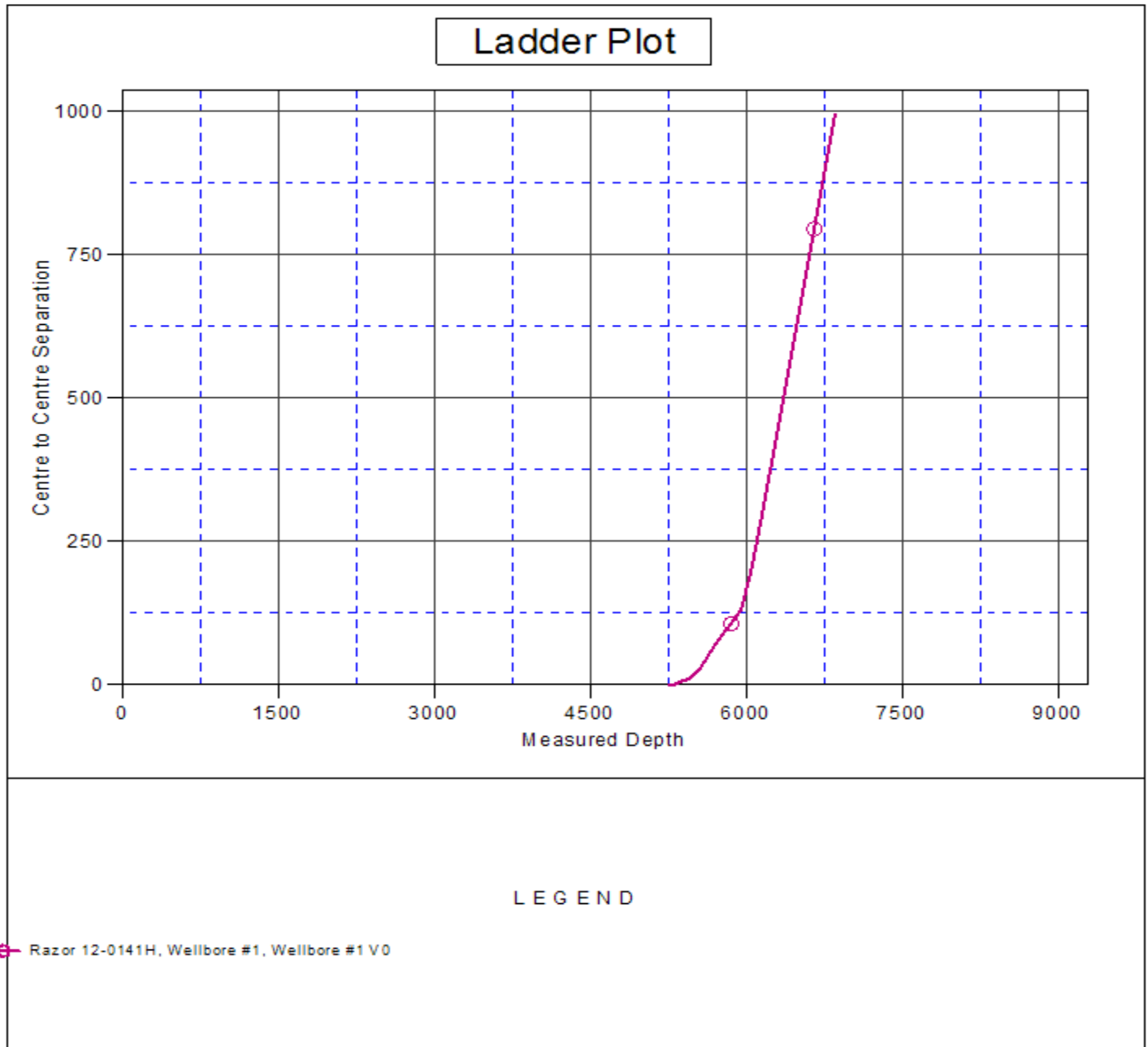




<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Razor 12-0141H
<b>Project:</b>	SEC.12-T10N-R58W	<b>TVD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Reference Site:</b>	Razor 12-0141H Pad Sec.12-T10N-R58W	<b>MD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Razor 12-0141H	<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 #2	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan 4 Sidetrack 1(10-3-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4964.4ft ((RKB - 16.5'))  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Razor 12-0141H  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 1.09°



<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Razor 12-0141H
<b>Project:</b>	SEC.12-T10N-R58W	<b>TVD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Reference Site:</b>	Razor 12-0141H Pad Sec.12-T10N-R58W	<b>MD Reference:</b>	WELL @ 4964.4ft ((RKB - 16.5'))
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Razor 12-0141H	<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 #2	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan 4 Sidetrack 1(10-3-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4964.4ft ((RKB - 16.5'))  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Razor 12-0141H  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 1.09°

