

# Whiting Oil & Gas

Well Name: **Wolf #35-2623H**

Surface Location: Wolf Pad Sec.35-T10N-R59W  
North American Datum 1983, US State Plane 1983, Colorado Northern Zone

Ground Elevation: 5006.3

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1533723.33	3429755.17	40.788131	-103.947986	

RKB Ensign 14 - 15' WELL @ 5021.3ft (RKB Ensign 14 - 15')

Wolf Pad Sec.35-T10N-R59W

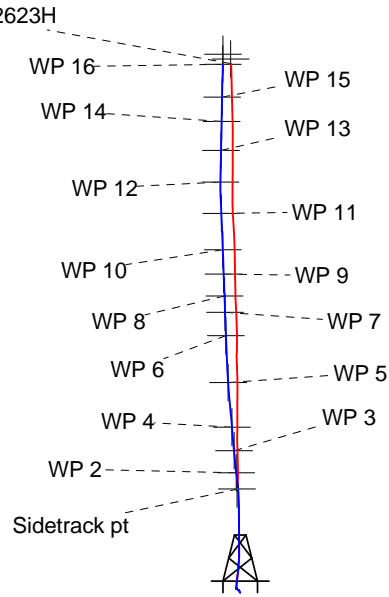
Wolf #35-2623H

Plan 5 (Dec 16,2011)

15:00, December 19 2011

BHL  
1928'FSL &  
1889'FWL  
SEC 26

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

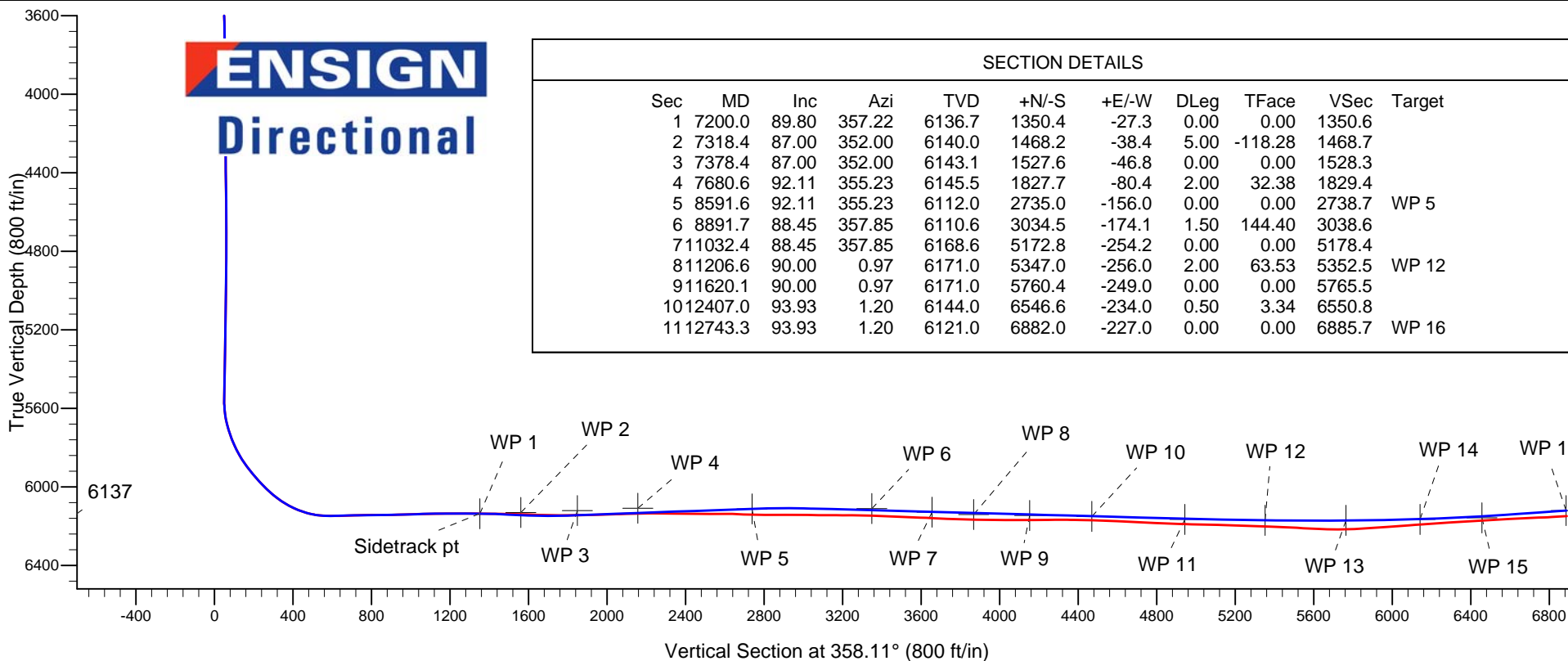


SHL  
320'FSL &  
1945'FWL  
SEC 35

Azimuths to True North  
Magnetic North: 8.39°

Magnetic Field  
Strength: 53368.5snT  
Dip Angle: 67.48°  
Date: 11/30/2011  
Model: IGRF2010

**ENSIGN**  
Directional



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	7200.0	89.80	357.22	6136.7	1350.4	-27.3	0.00	0.00	1350.6	
2	7318.4	87.00	352.00	6140.0	1468.2	-38.4	5.00	-118.28	1468.7	
3	7378.4	87.00	352.00	6143.1	1527.6	-46.8	0.00	0.00	1528.3	
4	7680.6	92.11	355.23	6145.5	1827.7	-80.4	2.00	32.38	1829.4	
5	8591.6	92.11	355.23	6112.0	2735.0	-156.0	0.00	0.00	2738.7	WP 5
6	8891.7	88.45	357.85	6110.6	3034.5	-174.1	1.50	144.40	3038.6	
7	11032.4	88.45	357.85	6168.6	5172.8	-254.2	0.00	0.00	5178.4	
8	11206.6	90.00	0.97	6171.0	5347.0	-256.0	2.00	63.53	5352.5	WP 12
9	11620.1	90.00	0.97	6171.0	5760.4	-249.0	0.00	0.00	5765.5	
10	12407.0	93.93	1.20	6144.0	6546.6	-234.0	0.50	3.34	6550.8	
11	12743.3	93.93	1.20	6121.0	6882.0	-227.0	0.00	0.00	6885.7	WP 16



## **Directional**

### **Whiting Oil & Gas**

**SEC.35-T10N-R59W**

**Wolf Pad Sec.35-T10N-R59W**

**Wolf #35-2623H**

**Wellbore #1**

**Plan: Plan 5 (Dec 16,2011)**

### **Standard Planning Report**

**16 December, 2011**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.35-T10N-R59W	<b>MD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wolf Pad Sec.35-T10N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wolf #35-2623H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan 5 (Dec 16,2011)		

<b>Project</b>	SEC.35-T10N-R59W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						Wolf Pad Sec.35-T10N-R59W											
Site Position:						Northing:			1,533,723.35 ft			Latitude:			40.788131		
From:			Lat/Long			Easting:			3,429,755.17 ft			Longitude:			-103.947986		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			1.00 °		

Well	Wolf #35-2623H					
Well Position	+N-S	0.0 ft	Northing:	1,533,723.33 ft	Latitude:	40.788131
	+E-W	0.0 ft	Easting:	3,429,755.17 ft	Longitude:	-103.947986
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,006.3 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/30/2011	8.39	67.48	53,368

<b>Design</b>	Plan 5 (Dec 16,2011)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	7,200.0
<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	358.11

<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
7,200.0	89.80	357.22	6,136.7	1,350.4	-27.3	0.00	0.00	0.00	0.00	
7,318.4	87.00	352.00	6,140.0	1,468.2	-38.4	5.00	-2.36	-4.41	-118.28	
7,378.4	87.00	352.00	6,143.1	1,527.6	-46.8	0.00	0.00	0.00	0.00	
7,680.6	92.11	355.23	6,145.5	1,827.7	-80.4	2.00	1.69	1.07	32.38	
8,591.6	92.11	355.23	6,112.0	2,735.0	-156.0	0.00	0.00	0.00	0.00	WP 5
8,891.7	88.45	357.85	6,110.6	3,034.5	-174.1	1.50	-1.22	0.87	144.40	
11,032.4	88.45	357.85	6,168.6	5,172.8	-254.2	0.00	0.00	0.00	0.00	
11,206.6	90.00	0.97	6,171.0	5,347.0	-256.0	2.00	0.89	1.79	63.53	WP 12
11,620.1	90.00	0.97	6,171.0	5,760.4	-249.0	0.00	0.00	0.00	0.00	
12,407.0	93.93	1.20	6,144.0	6,546.6	-234.0	0.50	0.50	0.03	3.34	
12,743.3	93.93	1.20	6,121.0	6,882.0	-227.0	0.00	0.00	0.00	0.00	WP 16

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.35-T10N-R59W	<b>MD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wolf Pad Sec.35-T10N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wolf #35-2623H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan 5 (Dec 16,2011)		

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)
7,200.0	89.80	357.22	6,136.7	1,350.4	-27.3	1,350.6	0.00	0.00	0.00
<b>Sidetrack pt - HARDLINES SHL 660'FSL</b>									
7,202.5	89.74	357.11	6,136.7	1,352.9	-27.5	1,353.1	5.00	-2.37	-4.40
<b>WP 1</b>									
7,250.0	88.62	355.02	6,137.4	1,400.3	-30.7	1,400.6	5.00	-2.37	-4.40
7,300.0	87.43	352.81	6,139.1	1,450.0	-36.0	1,450.4	5.00	-2.36	-4.41
7,318.4	87.00	352.00	6,140.0	1,468.2	-38.4	1,468.7	5.00	-2.36	-4.41
7,350.0	87.00	352.00	6,141.6	1,499.5	-42.8	1,500.1	0.00	0.00	0.00
7,378.4	87.00	352.00	6,143.1	1,527.6	-46.8	1,528.3	0.00	0.00	0.00
7,400.0	87.36	352.23	6,144.2	1,548.9	-49.7	1,549.7	2.00	1.69	1.07
7,410.6	87.54	352.35	6,144.7	1,559.4	-51.2	1,560.3	2.00	1.69	1.07
<b>WP 2</b>									
7,450.0	88.21	352.77	6,146.1	1,598.4	-56.3	1,599.4	2.00	1.69	1.07
7,500.0	89.05	353.30	6,147.3	1,648.1	-62.3	1,649.2	2.00	1.69	1.07
7,550.0	89.90	353.84	6,147.8	1,697.7	-67.9	1,699.1	2.00	1.69	1.07
7,600.0	90.74	354.37	6,147.5	1,747.5	-73.1	1,748.9	2.00	1.69	1.07
7,650.0	91.59	354.91	6,146.5	1,797.2	-77.7	1,798.8	2.00	1.69	1.07
7,680.6	92.11	355.23	6,145.5	1,827.7	-80.4	1,829.4	2.00	1.69	1.07
7,700.0	92.11	355.23	6,144.8	1,847.0	-82.0	1,848.7	0.00	0.00	0.00
7,701.6	92.11	355.23	6,144.7	1,848.6	-82.1	1,850.3	0.00	0.00	0.00
<b>WP 3</b>									
7,750.0	92.11	355.23	6,142.9	1,896.8	-86.1	1,898.6	0.00	0.00	0.00
7,800.0	92.11	355.23	6,141.1	1,946.6	-90.3	1,948.5	0.00	0.00	0.00
7,850.0	92.11	355.23	6,139.3	1,996.4	-94.4	1,998.4	0.00	0.00	0.00
7,900.0	92.11	355.23	6,137.4	2,046.2	-98.6	2,048.3	0.00	0.00	0.00
7,950.0	92.11	355.23	6,135.6	2,096.0	-102.7	2,098.3	0.00	0.00	0.00
8,000.0	92.11	355.23	6,133.7	2,145.8	-106.9	2,148.2	0.00	0.00	0.00
8,010.0	92.11	355.23	6,133.4	2,155.8	-107.7	2,158.1	0.00	0.00	0.00
<b>WP 4</b>									
8,050.0	92.11	355.23	6,131.9	2,195.6	-111.0	2,198.1	0.00	0.00	0.00
8,100.0	92.11	355.23	6,130.1	2,245.4	-115.2	2,248.0	0.00	0.00	0.00
8,150.0	92.11	355.23	6,128.2	2,295.2	-119.3	2,297.9	0.00	0.00	0.00
8,200.0	92.11	355.23	6,126.4	2,345.0	-123.5	2,347.8	0.00	0.00	0.00
8,250.0	92.11	355.23	6,124.6	2,394.8	-127.6	2,397.7	0.00	0.00	0.00
8,300.0	92.11	355.23	6,122.7	2,444.6	-131.8	2,447.6	0.00	0.00	0.00
8,350.0	92.11	355.23	6,120.9	2,494.4	-135.9	2,497.5	0.00	0.00	0.00
8,400.0	92.11	355.23	6,119.0	2,544.1	-140.1	2,547.4	0.00	0.00	0.00
8,450.0	92.11	355.23	6,117.2	2,593.9	-144.2	2,597.3	0.00	0.00	0.00
8,500.0	92.11	355.23	6,115.4	2,643.7	-148.4	2,647.2	0.00	0.00	0.00
8,550.0	92.11	355.23	6,113.5	2,693.5	-152.5	2,697.1	0.00	0.00	0.00
8,591.6	92.11	355.23	6,112.0	2,735.0	-156.0	2,738.7	0.00	0.00	0.00
<b>WP 5</b>									
8,600.0	92.00	355.31	6,111.7	2,743.3	-156.7	2,747.0	1.50	-1.22	0.87
8,650.0	91.39	355.74	6,110.2	2,793.1	-160.6	2,796.9	1.50	-1.22	0.87
8,700.0	90.78	356.18	6,109.3	2,843.0	-164.1	2,846.9	1.50	-1.22	0.87
8,750.0	90.17	356.62	6,108.8	2,892.9	-167.2	2,896.9	1.50	-1.22	0.87
8,800.0	89.56	357.05	6,109.0	2,942.8	-170.0	2,946.8	1.50	-1.22	0.87
8,850.0	88.95	357.49	6,109.6	2,992.8	-172.4	2,996.8	1.50	-1.22	0.87
8,891.7	88.45	357.85	6,110.6	3,034.5	-174.1	3,038.6	1.50	-1.22	0.87
8,900.0	88.45	357.85	6,110.8	3,042.7	-174.4	3,046.8	0.00	0.00	0.00
8,950.0	88.45	357.85	6,112.1	3,092.7	-176.3	3,096.8	0.00	0.00	0.00
9,000.0	88.45	357.85	6,113.5	3,142.6	-178.1	3,146.8	0.00	0.00	0.00
9,050.0	88.45	357.85	6,114.9	3,192.6	-180.0	3,196.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
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<b>Well:</b>	Wolf #35-2623H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan 5 (Dec 16,2011)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,100.0	88.45	357.85	6,116.2	3,242.5	-181.9	3,246.7	0.00	0.00	0.00	
9,150.0	88.45	357.85	6,117.6	3,292.5	-183.8	3,296.7	0.00	0.00	0.00	
9,200.0	88.45	357.85	6,118.9	3,342.4	-185.6	3,346.7	0.00	0.00	0.00	
9,202.4	88.45	357.85	6,119.0	3,344.8	-185.7	3,349.1	0.00	0.00	0.00	
WP 6										
9,250.0	88.45	357.85	6,120.3	3,392.3	-187.5	3,396.7	0.00	0.00	0.00	
9,300.0	88.45	357.85	6,121.6	3,442.3	-189.4	3,446.7	0.00	0.00	0.00	
9,350.0	88.45	357.85	6,123.0	3,492.2	-191.2	3,496.6	0.00	0.00	0.00	
9,400.0	88.45	357.85	6,124.3	3,542.2	-193.1	3,546.6	0.00	0.00	0.00	
9,450.0	88.45	357.85	6,125.7	3,592.1	-195.0	3,596.6	0.00	0.00	0.00	
9,500.0	88.45	357.85	6,127.1	3,642.1	-196.9	3,646.6	0.00	0.00	0.00	
9,509.0	88.45	357.85	6,127.3	3,651.0	-197.2	3,655.6	0.00	0.00	0.00	
WP 7										
9,550.0	88.45	357.85	6,128.4	3,692.0	-198.7	3,696.6	0.00	0.00	0.00	
9,600.0	88.45	357.85	6,129.8	3,742.0	-200.6	3,746.5	0.00	0.00	0.00	
9,650.0	88.45	357.85	6,131.1	3,791.9	-202.5	3,796.5	0.00	0.00	0.00	
9,700.0	88.45	357.85	6,132.5	3,841.9	-204.3	3,846.5	0.00	0.00	0.00	
9,721.4	88.45	357.85	6,133.1	3,863.2	-205.1	3,867.9	0.00	0.00	0.00	
WP 8										
9,750.0	88.45	357.85	6,133.8	3,891.8	-206.2	3,896.5	0.00	0.00	0.00	
9,800.0	88.45	357.85	6,135.2	3,941.8	-208.1	3,946.5	0.00	0.00	0.00	
9,850.0	88.45	357.85	6,136.6	3,991.7	-210.0	3,996.5	0.00	0.00	0.00	
9,900.0	88.45	357.85	6,137.9	4,041.7	-211.8	4,046.4	0.00	0.00	0.00	
9,950.0	88.45	357.85	6,139.3	4,091.6	-213.7	4,096.4	0.00	0.00	0.00	
10,000.0	88.45	357.85	6,140.6	4,141.5	-215.6	4,146.4	0.00	0.00	0.00	
10,006.6	88.45	357.85	6,140.8	4,148.1	-215.8	4,153.0	0.00	0.00	0.00	
WP 9										
10,050.0	88.45	357.85	6,142.0	4,191.5	-217.4	4,196.4	0.00	0.00	0.00	
10,100.0	88.45	357.85	6,143.3	4,241.4	-219.3	4,246.4	0.00	0.00	0.00	
10,150.0	88.45	357.85	6,144.7	4,291.4	-221.2	4,296.3	0.00	0.00	0.00	
10,200.0	88.45	357.85	6,146.1	4,341.3	-223.1	4,346.3	0.00	0.00	0.00	
10,250.0	88.45	357.85	6,147.4	4,391.3	-224.9	4,396.3	0.00	0.00	0.00	
10,300.0	88.45	357.85	6,148.8	4,441.2	-226.8	4,446.3	0.00	0.00	0.00	
10,323.9	88.45	357.85	6,149.4	4,465.1	-227.7	4,470.1	0.00	0.00	0.00	
WP 10										
10,350.0	88.45	357.85	6,150.1	4,491.2	-228.7	4,496.3	0.00	0.00	0.00	
10,400.0	88.45	357.85	6,151.5	4,541.1	-230.5	4,546.2	0.00	0.00	0.00	
10,450.0	88.45	357.85	6,152.8	4,591.1	-232.4	4,596.2	0.00	0.00	0.00	
10,500.0	88.45	357.85	6,154.2	4,641.0	-234.3	4,646.2	0.00	0.00	0.00	
10,550.0	88.45	357.85	6,155.5	4,691.0	-236.2	4,696.2	0.00	0.00	0.00	
10,600.0	88.45	357.85	6,156.9	4,740.9	-238.0	4,746.2	0.00	0.00	0.00	
10,650.0	88.45	357.85	6,158.3	4,790.8	-239.9	4,796.2	0.00	0.00	0.00	
10,700.0	88.45	357.85	6,159.6	4,840.8	-241.8	4,846.1	0.00	0.00	0.00	
10,750.0	88.45	357.85	6,161.0	4,890.7	-243.6	4,896.1	0.00	0.00	0.00	
10,797.4	88.45	357.85	6,162.3	4,938.1	-245.4	4,943.5	0.00	0.00	0.00	
WP 11										
10,800.0	88.45	357.85	6,162.3	4,940.7	-245.5	4,946.1	0.00	0.00	0.00	
10,850.0	88.45	357.85	6,163.7	4,990.6	-247.4	4,996.1	0.00	0.00	0.00	
10,900.0	88.45	357.85	6,165.0	5,040.6	-249.3	5,046.1	0.00	0.00	0.00	
10,950.0	88.45	357.85	6,166.4	5,090.5	-251.1	5,096.0	0.00	0.00	0.00	
11,000.0	88.45	357.85	6,167.8	5,140.5	-253.0	5,146.0	0.00	0.00	0.00	
11,032.4	88.45	357.85	6,168.6	5,172.8	-254.2	5,178.4	0.00	0.00	0.00	
11,050.0	88.60	358.17	6,169.1	5,190.4	-254.8	5,196.0	2.00	0.89	1.79	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.35-T10N-R59W	<b>MD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wolf Pad Sec.35-T10N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wolf #35-2623H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan 5 (Dec 16,2011)		

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)
11,100.0	89.05	359.07	6,170.1	5,240.4	-256.0	5,246.0	2.00	0.89	1.79
11,150.0	89.49	359.96	6,170.8	5,290.4	-256.5	5,296.0	2.00	0.89	1.79
11,200.0	89.94	0.86	6,171.0	5,340.4	-256.1	5,345.9	2.00	0.89	1.79
11,206.6	90.00	0.97	6,171.0	5,347.0	-256.0	5,352.5	2.00	0.89	1.79
<b>WP 12</b>									
11,250.0	90.00	0.97	6,171.0	5,390.4	-255.3	5,395.9	0.00	0.00	0.00
11,300.0	90.00	0.97	6,171.0	5,440.4	-254.4	5,445.8	0.00	0.00	0.00
11,350.0	90.00	0.97	6,171.0	5,490.4	-253.6	5,495.7	0.00	0.00	0.00
11,400.0	90.00	0.97	6,171.0	5,540.4	-252.7	5,545.7	0.00	0.00	0.00
11,450.0	90.00	0.97	6,171.0	5,590.4	-251.9	5,595.6	0.00	0.00	0.00
11,500.0	90.00	0.97	6,171.0	5,640.3	-251.0	5,645.6	0.00	0.00	0.00
11,550.0	90.00	0.97	6,171.0	5,690.3	-250.2	5,695.5	0.00	0.00	0.00
11,600.0	90.00	0.97	6,171.0	5,740.3	-249.3	5,745.4	0.00	0.00	0.00
11,618.7	90.00	0.97	6,171.0	5,759.0	-249.0	5,764.1	0.00	0.00	0.00
<b>WP 13</b>									
11,620.1	90.00	0.97	6,171.0	5,760.4	-249.0	5,765.5	0.00	0.00	0.00
11,650.0	90.15	0.98	6,171.0	5,790.3	-248.5	5,795.4	0.50	0.50	0.03
11,700.0	90.40	1.00	6,170.7	5,840.3	-247.6	5,845.3	0.50	0.50	0.03
11,750.0	90.65	1.01	6,170.3	5,890.3	-246.7	5,895.2	0.50	0.50	0.03
11,800.0	90.90	1.03	6,169.6	5,940.3	-245.8	5,945.2	0.50	0.50	0.03
11,850.0	91.15	1.04	6,168.7	5,990.3	-244.9	5,995.1	0.50	0.50	0.03
11,900.0	91.40	1.05	6,167.6	6,040.3	-244.0	6,045.0	0.50	0.50	0.03
11,950.0	91.65	1.07	6,166.3	6,090.2	-243.1	6,094.9	0.50	0.50	0.03
11,996.8	91.88	1.08	6,164.8	6,137.0	-242.2	6,141.6	0.50	0.50	0.03
<b>WP 14</b>									
12,000.0	91.90	1.08	6,164.7	6,140.2	-242.2	6,144.8	0.50	0.50	0.03
12,050.0	92.15	1.10	6,163.0	6,190.2	-241.2	6,194.7	0.50	0.50	0.03
12,100.0	92.40	1.11	6,161.0	6,240.1	-240.2	6,244.6	0.50	0.50	0.03
12,150.0	92.65	1.13	6,158.8	6,290.1	-239.3	6,294.5	0.50	0.50	0.03
12,200.0	92.89	1.14	6,156.4	6,340.0	-238.3	6,344.4	0.50	0.50	0.03
12,250.0	93.14	1.16	6,153.7	6,389.9	-237.3	6,394.3	0.50	0.50	0.03
12,300.0	93.39	1.17	6,150.9	6,439.8	-236.3	6,444.1	0.50	0.50	0.03
12,312.7	93.46	1.18	6,150.1	6,452.5	-236.0	6,456.8	0.50	0.50	0.03
<b>WP 15</b>									
12,350.0	93.64	1.19	6,147.8	6,489.7	-235.2	6,493.9	0.50	0.50	0.03
12,400.0	93.89	1.20	6,144.5	6,539.6	-234.2	6,543.8	0.50	0.50	0.03
12,407.0	93.93	1.20	6,144.0	6,546.6	-234.0	6,550.8	0.50	0.50	0.03
12,450.0	93.93	1.20	6,141.1	6,589.5	-233.1	6,593.6	0.00	0.00	0.00
12,500.0	93.93	1.20	6,137.7	6,639.3	-232.1	6,643.4	0.00	0.00	0.00
12,550.0	93.93	1.20	6,134.2	6,689.2	-231.0	6,693.2	0.00	0.00	0.00
12,600.0	93.93	1.20	6,130.8	6,739.1	-230.0	6,743.0	0.00	0.00	0.00
12,650.0	93.93	1.20	6,127.4	6,788.9	-229.0	6,792.8	0.00	0.00	0.00
12,700.0	93.93	1.20	6,124.0	6,838.8	-227.9	6,842.6	0.00	0.00	0.00
12,743.3	93.93	1.20	6,121.0	6,882.0	-227.0	6,885.7	0.00	0.00	0.00
<b>TARGET BHL 1994'FSL &amp; 1991'FWL Sec.26 - Way pt 2 - WP 16</b>									

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.35-T10N-R59W	<b>MD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wolf Pad Sec.35-T10N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wolf #35-2623H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan 5 (Dec 16,2011)		

Targets									
Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	
									Latitude Longitude
WP 15		0.00	0.00	6,158.0	6,453.0	-235.0	1,540,171.22	3,429,407.27	40.805843 -103.948835
- plan misses target center by 8.0ft at 12312.7ft MD (6150.1 TVD, 6452.5 N, -236.0 E)									
- Point									
WP 10		0.00	0.00	6,151.0	4,465.0	-228.0	1,538,183.65	3,429,449.06	40.800386 -103.948810
- plan misses target center by 1.6ft at 10323.9ft MD (6149.4 TVD, 4465.1 N, -227.7 E)									
- Point									
WP 4		0.00	0.00	6,109.0	2,155.0	-106.0	1,535,876.14	3,429,611.47	40.794046 -103.948369
- plan misses target center by 24.4ft at 8010.0ft MD (6133.4 TVD, 2155.8 N, -107.7 E)									
- Point									
WP 13		0.00	0.00	6,171.0	5,759.0	-249.0	1,539,477.08	3,429,405.42	40.803938 -103.948885
- plan hits target center									
- Point									
TARGET BHL 1994'F:		0.00	0.00	6,139.0	6,947.6	-124.6	1,540,667.65	3,429,509.02	40.807200 -103.948436
- plan misses target center by 122.9ft at 12743.3ft MD (6121.0 TVD, 6882.0 N, -227.0 E)									
- Point									
WP 8		0.00	0.00	6,141.0	3,863.0	-205.0	1,537,582.15	3,429,482.59	40.798734 -103.948726
- plan misses target center by 7.9ft at 9721.4ft MD (6133.1 TVD, 3863.2 N, -205.1 E)									
- Point									
WP 1		0.00	0.00	6,137.0	1,352.0	-41.0	1,535,074.40	3,429,690.51	40.791842 -103.948134
- plan misses target center by 13.6ft at 7202.2ft MD (6136.7 TVD, 1352.7 N, -27.4 E)									
- Point									
WP 9		0.00	0.00	6,146.0	4,148.0	-216.0	1,537,866.91	3,429,466.61	40.799516 -103.948766
- plan misses target center by 5.2ft at 10006.6ft MD (6140.8 TVD, 4148.1 N, -215.8 E)									
- Point									
HARDLINES SHL 66C		0.00	0.00	1.0	340.0	-500.0	1,534,054.54	3,429,249.30	40.789064 -103.949792
- plan misses target center by 6236.3ft at 7200.0ft MD (6136.7 TVD, 1350.4 N, -27.3 E)									
- Polygon									
Point 1				1.0	0.0	0.0	1,534,054.54	3,429,249.30	
Point 2				1.0	0.0	1,000.0	1,534,072.04	3,430,249.14	
WP 6		0.00	0.00	6,111.0	3,345.0	-186.0	1,537,064.56	3,429,510.66	40.797312 -103.948658
- plan misses target center by 8.0ft at 9202.4ft MD (6119.0 TVD, 3344.8 N, -185.7 E)									
- Point									
WP 5		0.00	0.00	6,112.0	2,735.0	-156.0	1,536,455.18	3,429,551.33	40.795638 -103.948549
- plan hits target center									
- Point									
Way pt 2		0.00	0.00	6,140.0	7,010.6	-225.0	1,540,728.91	3,429,407.51	40.807373 -103.948799
- plan misses target center by 130.0ft at 12743.3ft MD (6121.0 TVD, 6882.0 N, -227.0 E)									
- Point									
WP 3		0.00	0.00	6,121.0	1,848.0	-79.0	1,535,569.66	3,429,643.84	40.793203 -103.948271
- plan misses target center by 23.9ft at 7701.6ft MD (6144.7 TVD, 1848.6 N, -82.1 E)									
- Point									
WP 16		0.00	0.00	6,121.0	6,882.0	-227.0	1,540,600.29	3,429,407.76	40.807020 -103.948806
- plan hits target center									
- Point									
WP 12		0.00	0.00	6,171.0	5,347.0	-256.0	1,539,065.02	3,429,405.63	40.802807 -103.948911
- plan hits target center									
- Point									
WP 14		0.00	0.00	6,166.0	6,137.0	-242.0	1,539,855.15	3,429,405.80	40.804975 -103.948860
- plan misses target center by 1.2ft at 11996.8ft MD (6164.8 TVD, 6137.0 N, -242.2 E)									
- Point									
WP 2		0.00	0.00	6,131.0	1,560.0	-51.0	1,535,282.20	3,429,676.88	40.792413 -103.948170

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
<b>Company:</b>	Whiting Oil & Gas	<b>TVD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Project:</b>	SEC.35-T10N-R59W	<b>MD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Site:</b>	Wolf Pad Sec.35-T10N-R59W	<b>North Reference:</b>	True
<b>Well:</b>	Wolf #35-2623H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan 5 (Dec 16,2011)		

- plan misses target center by 13.7ft at 7410.6ft MD (6144.7 TVD, 1559.4 N, -51.2 E) - Point									
WP 11	0.00	0.00	6,166.0	4,938.0	-245.0	1,538,656.28	3,429,423.79	40.801684	-103.948871
- plan misses target center by 3.8ft at 10797.4ft MD (6162.3 TVD, 4938.1 N, -245.4 E) - Point									
WP 7	0.00	0.00	6,129.0	3,651.0	-197.0	1,537,370.32	3,429,494.30	40.798152	-103.948698
- plan misses target center by 1.7ft at 9509.0ft MD (6127.3 TVD, 3651.0 N, -197.2 E) - Point									

Plan Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		
			+N/-S (ft)	+E/-W (ft)	Comment
	7,200.0	6,136.7	1,350.4	-27.3	Sidetrack pt





## **Directional**

### **Whiting Oil & Gas**

**SEC.35-T10N-R59W**

**Wolf Pad Sec.35-T10N-R59W**

**Wolf #35-2623H**

**Wellbore #1**

**Plan 5 (Dec 16,2011)**

### **Anticollision Report**

**16 December, 2011**

<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
<b>Project:</b>	SEC.35-T10N-R59W	<b>TVD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Reference Site:</b>	Wolf Pad Sec.35-T10N-R59W	<b>MD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wolf #35-2623H	<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 5 (Dec 16,2011)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan 5 (Dec 16,2011)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<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 1,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 12/16/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
272.0	7,200.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard
7,200.0	12,744.1	Plan 5 (Dec 16,2011) (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>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
Wolf Pad Sec.35-T10N-R59W						
Wolf #35-2623H - Wellbore #1 - Wellbore #1	7,200.0	7,200.0	0.0	0.0	0.000	Level 1, CC, SF
Wolf #35-2623H - Wellbore #1 - Wellbore #1	12,744.1	12,744.4	110.7	-81.1	0.577	Level 1, ES

Offset Design Wolf Pad Sec.35-T10N-R59W - Wolf #35-2623H - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 272-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
7,200.0	6,136.7	7,200.0	6,136.7	0.0	0.0	0.00	1,350.4	-27.3	0.0	0.0	0.00	0.000	Level 1, CC, SF
7,260.7	6,137.6	7,260.6	6,136.9	1.0	1.0	66.16	1,411.0	-30.0	1.9	0.1	1.79	1.049	
7,300.0	6,139.1	7,299.7	6,137.0	1.6	1.6	68.38	1,450.1	-30.9	5.5	2.5	2.99	1.844	
7,400.0	6,144.2	7,398.5	6,139.3	3.4	3.1	76.01	1,548.8	-30.5	19.9	13.6	6.26	3.178	
7,500.0	6,147.3	7,498.1	6,143.1	5.2	4.7	82.57	1,648.4	-30.5	32.1	22.4	9.72	3.304	
7,600.0	6,147.5	7,598.3	6,144.5	7.0	6.3	85.75	1,748.6	-32.2	41.0	27.8	13.22	3.104	
7,700.0	6,144.8	7,698.6	6,143.9	8.8	8.0	88.83	1,848.7	-35.3	46.7	29.9	16.75	2.787	
7,800.0	6,141.1	7,797.6	6,143.0	10.6	9.7	92.02	1,947.7	-38.9	51.5	31.2	20.22	2.545	
7,900.0	6,137.4	7,895.6	6,139.1	12.4	11.4	91.41	2,045.6	-38.9	59.7	36.0	23.73	2.516	
8,000.0	6,133.7	7,995.4	6,136.4	14.3	13.0	92.03	2,145.4	-37.4	69.6	42.3	27.21	2.556	
8,100.0	6,130.1	8,095.6	6,135.0	16.1	14.7	93.44	2,245.5	-37.0	78.4	47.7	30.72	2.551	
8,200.0	6,126.4	8,194.8	6,136.3	18.0	16.4	96.43	2,344.7	-37.5	86.5	52.4	34.13	2.536	
8,300.0	6,122.7	8,293.2	6,138.2	19.8	18.1	99.13	2,443.1	-37.3	95.8	58.3	37.47	2.556	
8,400.0	6,119.0	8,394.4	6,138.3	21.7	19.9	100.40	2,544.2	-36.5	105.4	64.5	40.93	2.575	
8,500.0	6,115.4	8,494.3	6,138.3	23.6	21.6	101.31	2,644.2	-35.0	115.7	71.3	44.37	2.606	
8,600.0	6,111.7	8,595.1	6,141.3	25.5	23.4	103.59	2,744.9	-35.4	124.8	77.3	47.55	2.625	
8,700.0	6,108.4	8,697.3	6,143.3	27.0	25.2	105.48	2,847.0	-39.4	130.1	79.7	50.48	2.578	
8,800.0	6,105.9	8,797.3	6,141.9	28.6	26.9	105.51	2,946.9	-42.8	134.4	80.7	53.72	2.502	
8,900.0	6,104.0	8,894.8	6,143.7	30.2	28.6	106.51	3,044.4	-45.6	139.4	82.7	56.71	2.458	
9,000.0	6,102.9	8,990.3	6,144.3	31.9	30.3	106.47	3,139.9	-45.4	146.3	86.3	59.93	2.440	
9,100.0	6,102.5	9,087.7	6,145.7	33.5	32.0	106.33	3,237.2	-43.9	154.1	90.9	63.18	2.438	
9,200.0	6,102.8	9,189.8	6,146.9	35.2	33.8	105.87	3,339.3	-41.5	161.8	95.2	66.66	2.428	
9,300.0	6,103.8	9,295.9	6,150.5	36.9	35.6	106.32	3,445.2	-42.3	166.6	96.6	69.96	2.381	
9,400.0	6,105.5	9,399.3	6,155.6	38.6	37.5	107.46	3,548.4	-47.5	167.0	93.9	73.04	2.286	

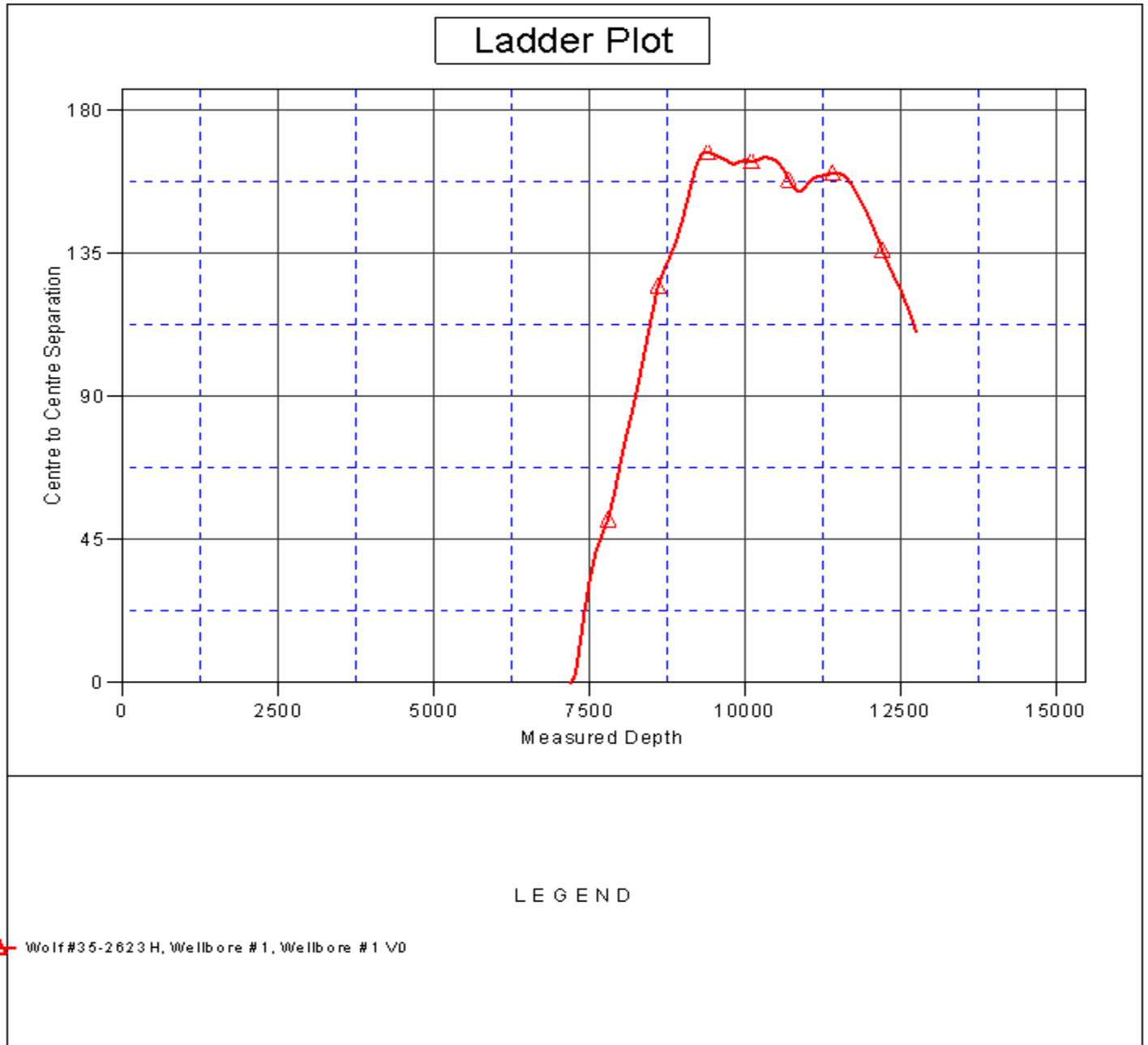
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
<b>Project:</b>	SEC.35-T10N-R59W	<b>TVD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Reference Site:</b>	Wolf Pad Sec.35-T10N-R59W	<b>MD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wolf #35-2623H	<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 5 (Dec 16,2011)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0ft
Survey Program: 272-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)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,500.0	6,107.9	9,499.0	6,159.1	40.3	39.3	107.93	3,647.9	-52.6	166.2	89.9	76.24	2.179	
9,600.0	6,111.0	9,598.3	6,163.0	42.1	41.0	108.34	3,747.1	-57.3	165.2	85.8	79.42	2.081	
9,700.0	6,114.8	9,695.3	6,166.7	43.8	42.8	108.44	3,843.9	-61.1	164.3	81.6	82.72	1.987	
9,800.0	6,118.8	9,796.3	6,168.7	45.7	44.6	107.79	3,944.8	-64.3	163.4	76.9	86.47	1.889	
9,824.4	6,119.7	9,819.5	6,168.9	46.1	45.0	107.55	3,968.0	-64.8	163.3	75.9	87.40	1.868	
9,900.0	6,122.7	9,893.7	6,169.2	47.5	46.3	106.50	4,042.2	-65.5	163.9	73.5	90.43	1.813	
10,000.0	6,126.7	9,995.8	6,169.1	49.3	48.1	104.97	4,144.3	-66.6	164.5	70.0	94.55	1.740	
10,100.0	6,130.6	10,096.0	6,168.0	51.2	49.9	103.19	4,244.5	-68.6	164.1	65.4	98.70	1.663	
10,137.7	6,132.1	10,133.1	6,167.9	51.9	50.5	102.63	4,281.6	-69.4	164.0	63.8	100.20	1.637	
10,200.0	6,134.6	10,192.1	6,167.9	53.0	51.6	101.76	4,340.5	-70.2	164.5	61.9	102.62	1.603	
10,300.0	6,138.5	10,295.2	6,169.9	54.9	53.4	100.94	4,443.6	-71.7	165.4	58.9	106.50	1.553	
10,381.6	6,141.8	10,377.0	6,171.9	56.4	54.8	100.53	4,525.4	-74.0	165.2	55.6	109.54	1.508	
10,400.0	6,142.5	10,394.9	6,172.5	56.7	55.2	100.49	4,543.2	-74.5	165.2	55.0	110.20	1.499 Level 3	
10,500.0	6,146.4	10,499.3	6,177.2	58.6	57.0	100.75	4,647.4	-78.4	164.4	50.6	113.77	1.445 Level 3	
10,600.0	6,150.4	10,601.1	6,182.2	60.4	58.8	101.24	4,749.0	-84.0	162.0	44.8	117.24	1.382 Level 3	
10,700.0	6,154.3	10,702.3	6,186.4	62.3	60.6	101.59	4,849.8	-90.7	158.3	37.6	120.73	1.312 Level 3	
10,800.0	6,158.3	10,798.8	6,190.0	64.2	62.4	101.73	4,946.1	-96.5	155.2	31.0	124.21	1.250 Level 2	
10,864.1	6,160.8	10,859.5	6,191.7	65.4	63.5	101.52	5,006.7	-98.8	154.5	28.0	126.55	1.221 Level 2	
10,900.0	6,162.3	10,894.8	6,192.4	66.0	64.1	101.26	5,042.0	-99.5	154.7	26.7	127.94	1.209 Level 2	
11,000.0	6,166.2	10,991.0	6,194.4	67.9	65.8	100.45	5,138.2	-99.8	156.8	25.0	131.78	1.190 Level 2	
11,100.0	6,169.7	11,092.0	6,197.9	69.8	67.6	100.24	5,239.2	-99.8	159.0	23.6	135.41	1.175 Level 2	
11,200.0	6,171.0	11,190.0	6,201.6	71.6	69.3	101.06	5,337.1	-99.8	159.3	20.8	138.48	1.150 Level 2	
11,300.0	6,171.0	11,288.9	6,205.1	73.5	71.1	102.31	5,435.9	-98.3	159.9	18.4	141.51	1.130 Level 2	
11,400.0	6,171.0	11,388.2	6,209.7	75.3	72.9	103.98	5,535.1	-97.2	160.4	16.1	144.22	1.112 Level 2	
11,500.0	6,171.0	11,490.5	6,215.0	77.2	74.7	105.92	5,637.2	-96.8	160.4	13.7	146.69	1.093 Level 2	
11,600.0	6,171.0	11,593.6	6,216.7	79.0	76.5	106.67	5,740.3	-96.5	159.5	9.7	149.81	1.065 Level 2	
11,700.0	6,170.7	11,695.2	6,212.9	80.9	78.3	105.61	5,841.8	-96.4	157.0	2.9	154.07	1.019 Level 2	
11,800.0	6,169.6	11,797.5	6,206.3	82.8	80.2	103.87	5,943.9	-96.6	153.8	-4.9	158.72	0.969 Level 1	
11,900.0	6,167.6	11,897.6	6,199.2	84.6	82.0	102.23	6,043.7	-97.5	149.9	-13.3	163.21	0.919 Level 1	
12,000.0	6,164.7	11,997.0	6,191.9	86.5	83.7	100.81	6,142.9	-98.8	146.0	-21.5	167.49	0.872 Level 1	
12,100.0	6,161.0	12,099.3	6,185.0	88.4	85.5	99.92	6,244.9	-101.2	141.3	-30.3	171.53	0.824 Level 1	
12,200.0	6,156.4	12,200.0	6,178.2	90.3	87.3	99.43	6,345.3	-104.0	136.2	-39.2	175.39	0.776 Level 1	
12,300.0	6,150.9	12,297.7	6,172.1	92.1	89.1	99.44	6,442.8	-106.6	131.5	-47.5	178.98	0.735 Level 1	
12,400.0	6,144.6	12,398.1	6,166.7	94.0	90.9	100.21	6,543.0	-108.8	127.4	-54.9	182.27	0.699 Level 1	
12,500.0	6,137.7	12,497.4	6,161.6	95.9	92.7	101.34	6,642.1	-110.9	123.6	-61.7	185.31	0.667 Level 1	
12,600.0	6,130.9	12,598.1	6,156.8	97.7	94.5	102.83	6,742.7	-114.4	118.6	-69.5	188.07	0.630 Level 1	
12,700.0	6,124.0	12,700.5	6,151.8	99.6	96.3	104.49	6,844.9	-118.1	113.5	-77.1	190.59	0.595 Level 1	
12,744.1	6,121.0	12,744.4	6,149.2	100.5	97.1	105.08	6,888.7	-120.2	110.7	-81.1	191.74	0.577 Level 1, ES	

<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
<b>Project:</b>	SEC.35-T10N-R59W	<b>TVD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Reference Site:</b>	Wolf Pad Sec.35-T10N-R59W	<b>MD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wolf #35-2623H	<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 5 (Dec 16,2011)	<b>Offset TVD Reference:</b>	Offset Datum

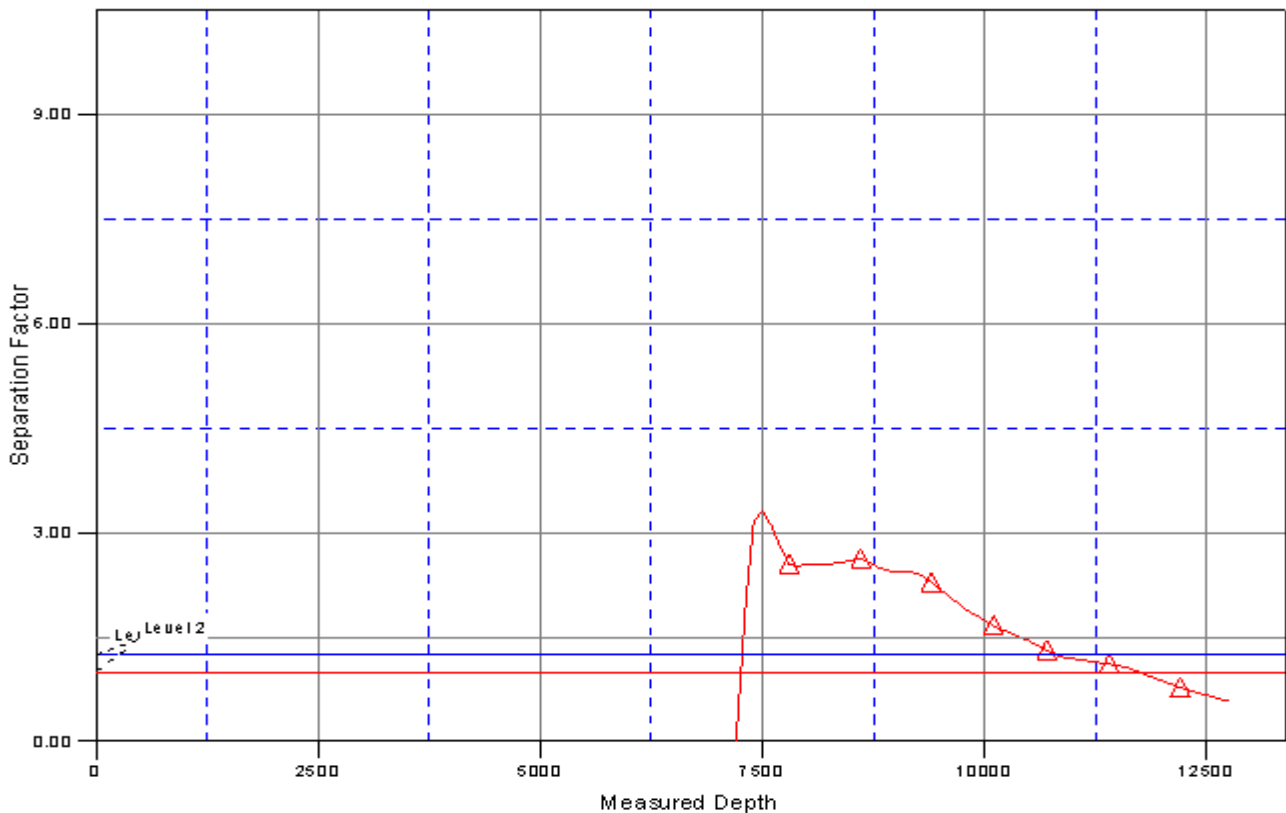
Reference Depths are relative to WELL @ 5021.3ft (RKB Ensign 14 - 1 Coordinates are relative to: Wolf #35-2623H  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 1.00°



<b>Company:</b>	Whiting Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well Wolf #35-2623H
<b>Project:</b>	SEC.35-T10N-R59W	<b>TVD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Reference Site:</b>	Wolf Pad Sec.35-T10N-R59W	<b>MD Reference:</b>	WELL @ 5021.3ft (RKB Ensign 14 - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Wolf #35-2623H	<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 5 (Dec 16,2011)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 5021.3ft (RKB Ensign 14 - 1 Coordinates are relative to: Wolf #35-2623H  
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: 1.00°

## Separation Factor Plot



### LEGEND

▲ Wolf #35-2623 H, Wellbore #1, Wellbore #1 VD