

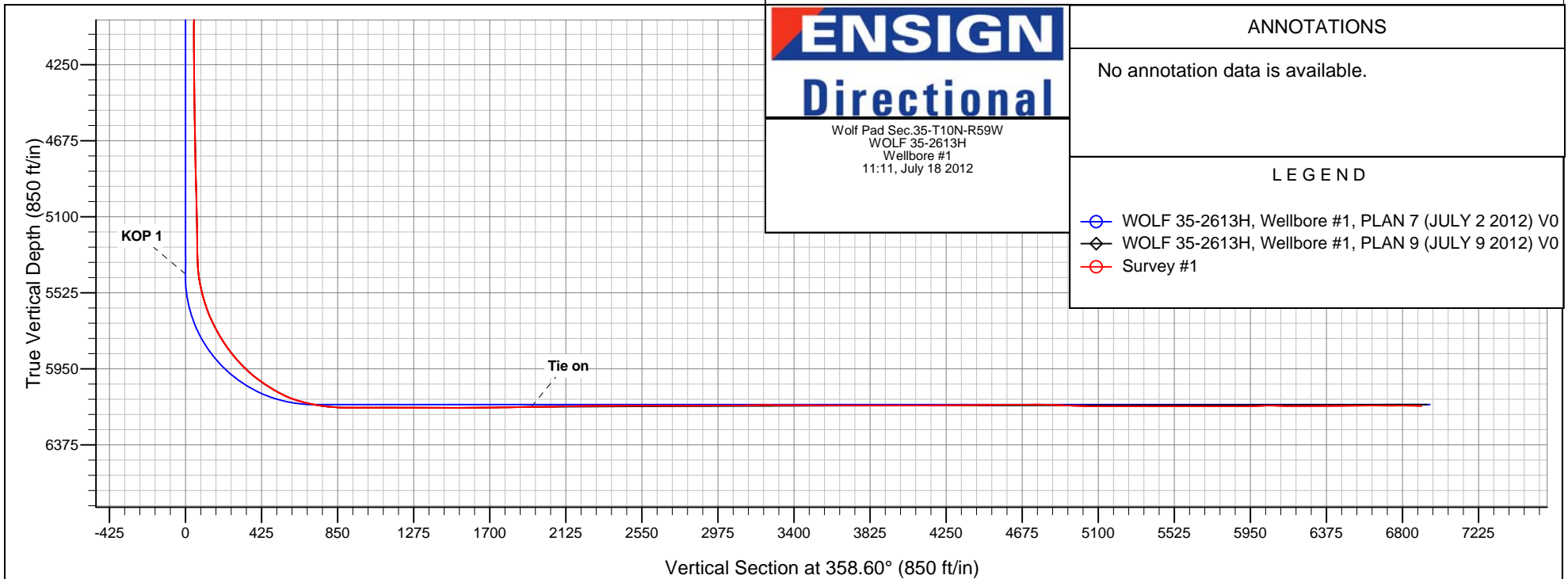
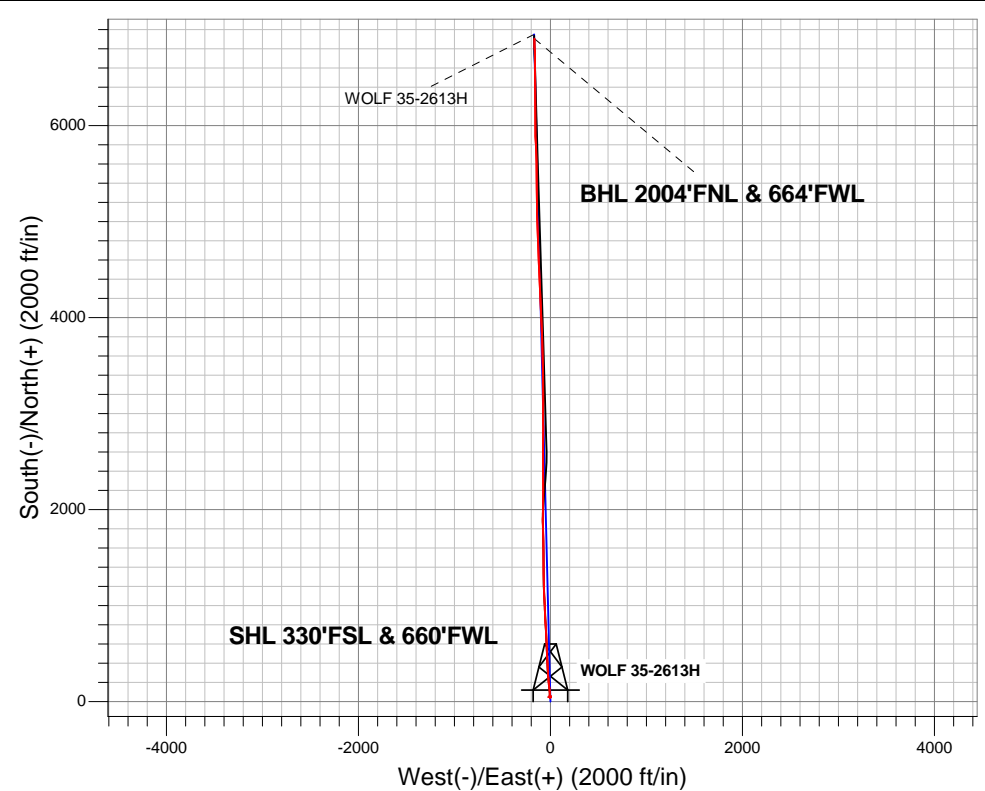
Whiting Oil & Gas

Well Name: WOLF 35-2613H

Surface Location: Wolf Pad Sec.35-T10N-R59W
North American Datum 1983 , US State Plane 1983Colorado Northern Zone
Ground Elevation: 5015.0
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1533694.67 3428470.03 40.788114 -103.952628
Cade 21 KB 16.5 RKB Cade @ 5031.5ft (Cade 21 KB 16.5)

FINAL SURVEY

Projected Bottom Hole Location
12655'MD 6158'TVD 6905'N & 166'W of SHL
90.00 degree Incl @ 358.50 degree AZM





Whiting Oil & Gas

SEC.35-T10N-R59W

Wolf Pad Sec.35-T10N-R59W

WOLF 35-2613H

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 July, 2012

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well WOLF 35-2613H
Project:	SEC.35-T10N-R59W	TVD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Site:	Wolf Pad Sec.35-T10N-R59W	MD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Well:	WOLF 35-2613H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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

Site		Wolf Pad Sec.35-T10N-R59W			
Site Position:		Northing:		1,533,694.69ft	
From:	Lat/Long	Easting:		Longitude:	
		3,428,470.03ft		-103.952628	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
0.0 ft		"		1.00 °	

Well	WOLF 35-2613H					
Well Position	+N-S	0.0 ft	Northing:	1,533,694.67 ft	Latitude:	40.788114
	+E-W	0.0 ft	Easting:	3,428,470.03 ft	Longitude:	-103.952628
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,015.0 ft

Wellbore #1						
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)	
	IGRF2010	2/24/2012	8.36	67.47	53,343	
	IGRF2010	6/27/2012	8.31	67.46	53,307	

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	358.60	

Survey Program		Date		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
1,564.0	12,655.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard

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)
HARDLINES - SHL 330'FSL & 660'FWL	1,560.0	3.57	18.55	1,559.3	36.3	-3.5	36.3	0.00	0.00	0.00
	1,564.0	3.50	23.10	1,563.3	36.5	-3.5	36.6	7.25	-1.83	113.80
	1,660.0	3.00	21.50	1,659.1	41.5	-1.4	41.5	0.53	-0.52	-1.67
	1,755.0	1.80	43.90	1,754.0	44.9	0.6	44.9	1.58	-1.26	23.58
	1,850.0	1.10	73.60	1,849.0	46.2	2.5	46.2	1.06	-0.74	31.26
	1,945.0	1.00	89.20	1,944.0	46.5	4.2	46.4	0.32	-0.11	16.42
	2,040.0	0.90	73.80	2,039.0	46.7	5.7	46.6	0.29	-0.11	-16.21
	2,135.0	0.60	42.80	2,134.0	47.3	6.8	47.1	0.52	-0.32	-32.63
	2,230.0	0.40	34.00	2,229.0	47.9	7.3	47.7	0.22	-0.21	-9.26
	2,325.0	0.40	6.30	2,324.0	48.5	7.5	48.3	0.20	0.00	-29.16
	2,420.0	0.40	348.00	2,419.0	49.2	7.5	49.0	0.13	0.00	-19.26

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well WOLF 35-2613H
Project:	SEC.35-T10N-R59W	TVD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Site:	Wolf Pad Sec.35-T10N-R59W	MD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Well:	WOLF 35-2613H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
2,515.0	0.50	318.30	2,514.0	49.8	7.1	49.6	0.26	0.11	-31.26	
2,610.0	0.60	326.90	2,609.0	50.6	6.6	50.4	0.14	0.11	9.05	
2,704.0	0.60	352.70	2,703.0	51.5	6.3	51.3	0.28	0.00	27.45	
2,799.0	0.40	310.70	2,797.9	52.2	5.9	52.0	0.43	-0.21	-44.21	
2,894.0	0.70	330.00	2,892.9	52.9	5.4	52.7	0.37	0.32	20.32	
2,989.0	0.70	293.30	2,987.9	53.6	4.6	53.5	0.46	0.00	-38.63	
3,086.0	0.80	316.00	3,084.9	54.3	3.6	54.2	0.32	0.10	23.40	
3,180.0	0.90	281.70	3,178.9	55.0	2.4	54.9	0.54	0.11	-36.49	
3,275.0	1.10	281.90	3,273.9	55.3	0.8	55.3	0.21	0.21	0.21	
3,370.0	1.40	237.90	3,368.9	54.9	-1.1	54.9	1.03	0.32	-46.32	
3,465.0	1.60	232.00	3,463.9	53.4	-3.1	53.5	0.27	0.21	-6.21	
3,560.0	1.80	248.50	3,558.8	52.1	-5.6	52.2	0.55	0.21	17.37	
3,655.0	2.00	247.80	3,653.8	50.9	-8.5	51.1	0.21	0.21	-0.74	
3,749.0	1.80	250.20	3,747.7	49.8	-11.4	50.0	0.23	-0.21	2.55	
3,844.0	1.30	237.40	3,842.7	48.7	-13.7	49.0	0.64	-0.53	-13.47	
3,939.0	1.50	243.60	3,937.6	47.6	-15.7	47.9	0.26	0.21	6.53	
4,034.0	1.80	252.50	4,032.6	46.6	-18.3	47.0	0.41	0.32	9.37	
4,128.0	0.70	46.20	4,126.6	46.5	-19.3	47.0	2.60	-1.17	163.51	
4,223.0	0.90	50.90	4,221.6	47.4	-18.3	47.8	0.22	0.21	4.95	
4,318.0	1.10	60.90	4,316.6	48.3	-16.9	48.7	0.28	0.21	10.53	
4,413.0	1.70	54.20	4,411.5	49.6	-15.0	49.9	0.65	0.63	-7.05	
4,508.0	1.40	64.80	4,506.5	50.9	-12.8	51.2	0.44	-0.32	11.16	
4,603.0	1.50	52.30	4,601.5	52.1	-10.7	52.4	0.35	0.11	-13.16	
4,698.0	1.60	36.00	4,696.4	54.0	-9.0	54.2	0.47	0.11	-17.16	
4,793.0	1.50	38.20	4,791.4	56.0	-7.4	56.2	0.12	-0.11	2.32	
4,888.0	1.80	28.80	4,886.4	58.3	-5.9	58.4	0.42	0.32	-9.89	
4,982.0	1.80	25.80	4,980.3	60.9	-4.6	61.0	0.10	0.00	-3.19	
5,077.0	1.40	10.80	5,075.3	63.4	-3.7	63.5	0.61	-0.42	-15.79	
5,172.0	0.80	334.40	5,170.3	65.2	-3.8	65.2	0.94	-0.63	-38.32	
5,267.0	0.90	328.50	5,265.3	66.4	-4.5	66.5	0.14	0.11	-6.21	
5,281.0	0.90	316.50	5,279.3	66.6	-4.6	66.7	1.34	0.00	-85.71	
5,295.0	1.10	327.20	5,293.3	66.8	-4.7	66.8	1.95	1.43	76.43	
5,326.0	1.10	317.50	5,324.2	67.2	-5.1	67.3	0.60	0.00	-31.29	
5,358.0	2.40	356.50	5,356.2	68.1	-5.3	68.2	5.29	4.06	121.88	
5,390.0	4.40	357.20	5,388.2	70.0	-5.4	70.1	6.25	6.25	2.19	
5,421.0	6.60	358.50	5,419.0	73.0	-5.6	73.1	7.11	7.10	4.19	
5,453.0	8.70	358.80	5,450.7	77.2	-5.7	77.4	6.56	6.56	0.94	
5,485.0	10.70	3.00	5,482.3	82.6	-5.5	82.7	6.63	6.25	13.13	
5,516.0	13.70	358.30	5,512.6	89.2	-5.5	89.3	10.19	9.68	-15.16	
5,548.0	15.90	354.40	5,543.5	97.3	-6.0	97.4	7.54	6.88	-12.19	
5,580.0	16.90	352.10	5,574.2	106.3	-7.1	106.4	3.73	3.13	-7.19	
5,611.0	18.30	354.80	5,603.8	115.6	-8.2	115.8	5.23	4.52	8.71	
5,643.0	21.00	354.40	5,633.9	126.3	-9.2	126.5	8.45	8.44	-1.25	
5,674.0	23.90	353.90	5,662.5	138.1	-10.4	138.3	9.38	9.35	-1.61	
5,706.0	26.20	353.20	5,691.5	151.6	-11.9	151.8	7.25	7.19	-2.19	
5,738.0	27.40	354.10	5,720.1	165.9	-13.5	166.2	3.96	3.75	2.81	
5,769.0	29.20	356.20	5,747.4	180.5	-14.8	180.8	6.63	5.81	6.77	
5,801.0	30.90	355.10	5,775.1	196.5	-16.0	196.8	5.58	5.31	-3.44	
5,833.0	33.00	353.70	5,802.2	213.4	-17.6	213.7	6.96	6.56	-4.38	
5,864.0	35.50	353.90	5,827.9	230.7	-19.5	231.1	8.07	8.06	0.65	
5,896.0	38.60	354.10	5,853.4	249.9	-21.5	250.3	9.69	9.69	0.63	
5,927.0	39.70	355.80	5,877.4	269.4	-23.2	269.9	4.96	3.55	5.48	
5,959.0	40.30	355.50	5,902.0	289.9	-24.8	290.4	1.97	1.88	-0.94	
5,991.0	42.60	356.40	5,925.9	311.0	-26.3	311.6	7.42	7.19	2.81	

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well WOLF 35-2613H
Project:	SEC.35-T10N-R59W	TVD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Site:	Wolf Pad Sec.35-T10N-R59W	MD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Well:	WOLF 35-2613H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
6,023.0	46.00	356.70	5,948.8	333.3	-27.6	333.9	10.65	10.63	0.94
6,054.0	48.90	356.40	5,969.8	356.1	-29.0	356.7	9.38	9.35	-0.97
6,086.0	51.10	357.20	5,990.4	380.6	-30.4	381.2	7.14	6.88	2.50
6,118.0	53.50	358.80	6,009.9	405.9	-31.3	406.5	8.48	7.50	5.00
6,149.0	55.80	359.20	6,027.9	431.2	-31.7	431.8	7.49	7.42	1.29
6,166.0	56.50	358.50	6,037.3	445.3	-32.0	445.9	5.35	4.12	-4.12
6,198.0	57.60	358.60	6,054.7	472.1	-32.7	472.8	3.45	3.44	0.31
6,229.0	59.20	357.60	6,071.0	498.5	-33.5	499.2	5.85	5.16	-3.23
6,261.0	61.60	357.40	6,086.8	526.3	-34.8	527.0	7.52	7.50	-0.63
6,293.0	65.20	357.60	6,101.1	554.9	-36.0	555.6	11.26	11.25	0.63
6,324.0	68.90	357.60	6,113.2	583.4	-37.2	584.1	11.94	11.94	0.00
6,356.0	72.50	356.50	6,123.8	613.6	-38.8	614.3	11.71	11.25	-3.44
6,387.0	74.80	356.70	6,132.5	643.2	-40.5	644.0	7.45	7.42	0.65
6,419.0	75.70	356.20	6,140.7	674.1	-42.4	675.0	3.19	2.81	-1.56
6,450.0	77.60	356.50	6,147.8	704.2	-44.4	705.1	6.20	6.13	0.97
6,482.0	80.50	356.40	6,153.9	735.6	-46.3	736.5	9.07	9.06	-0.31
6,513.0	83.50	357.40	6,158.2	766.2	-48.0	767.2	10.19	9.68	3.23
6,545.0	84.00	357.20	6,161.7	798.0	-49.5	799.0	1.68	1.56	-0.63
6,577.0	84.60	357.10	6,164.9	829.8	-51.0	830.8	1.90	1.88	-0.31
6,609.0	87.20	357.20	6,167.1	861.7	-52.6	862.7	8.13	8.13	0.31
6,660.0	90.60	357.30	6,168.1	912.6	-55.1	913.7	6.67	6.67	0.20
6,671.0	90.30	358.10	6,168.0	923.6	-55.5	924.7	7.77	-2.73	7.27
6,703.0	90.60	357.90	6,167.8	955.6	-56.6	956.7	1.13	0.94	-0.63
6,735.0	90.50	357.20	6,167.5	987.6	-58.0	988.7	2.21	-0.31	-2.19
6,766.0	89.50	357.10	6,167.5	1,018.5	-59.5	1,019.7	3.24	-3.23	-0.32
6,798.0	90.20	357.20	6,167.6	1,050.5	-61.1	1,051.7	2.21	2.19	0.31
6,829.0	90.70	356.90	6,167.3	1,081.4	-62.7	1,082.6	1.88	1.61	-0.97
6,861.0	89.80	357.60	6,167.2	1,113.4	-64.3	1,114.6	3.56	-2.81	2.19
6,893.0	89.00	357.10	6,167.5	1,145.4	-65.7	1,146.6	2.95	-2.50	-1.56
6,925.0	89.60	357.90	6,167.9	1,177.3	-67.1	1,178.6	3.12	1.88	2.50
6,956.0	89.90	357.90	6,168.0	1,208.3	-68.3	1,209.6	0.97	0.97	0.00
6,988.0	90.70	359.20	6,167.9	1,240.3	-69.1	1,241.6	4.77	2.50	4.06
7,020.0	90.60	358.80	6,167.5	1,272.3	-69.6	1,273.6	1.29	-0.31	-1.25
7,051.0	90.40	359.90	6,167.2	1,303.3	-70.0	1,304.6	3.61	-0.65	3.55
7,083.0	89.70	359.70	6,167.2	1,335.3	-70.1	1,336.6	2.28	-2.19	-0.63
7,115.0	89.60	359.30	6,167.4	1,367.3	-70.4	1,368.6	1.29	-0.31	-1.25
7,146.0	90.00	359.70	6,167.5	1,398.3	-70.7	1,399.6	1.82	1.29	1.29
7,178.0	89.30	359.30	6,167.7	1,430.3	-70.9	1,431.6	2.52	-2.19	-1.25
7,210.0	88.50	359.50	6,168.3	1,462.3	-71.3	1,463.6	2.58	-2.50	0.63
7,241.0	88.80	359.90	6,169.1	1,493.3	-71.4	1,494.6	1.61	0.97	1.29
7,273.0	90.20	0.20	6,169.3	1,525.3	-71.4	1,526.5	4.47	4.38	0.94
7,305.0	90.20	359.30	6,169.2	1,557.3	-71.5	1,558.5	2.81	0.00	-2.81
7,337.0	90.70	359.20	6,169.0	1,589.3	-72.0	1,590.5	1.59	1.56	-0.31
7,368.0	91.30	359.30	6,168.4	1,620.2	-72.4	1,621.5	1.96	1.94	0.32
7,400.0	91.30	358.50	6,167.7	1,652.2	-73.0	1,653.5	2.50	0.00	-2.50
7,432.0	91.30	358.60	6,167.0	1,684.2	-73.8	1,685.5	0.31	0.00	0.31
7,463.0	90.20	357.90	6,166.6	1,715.2	-74.7	1,716.5	4.21	-3.55	-2.26
7,495.0	91.00	357.60	6,166.2	1,747.2	-76.0	1,748.5	2.67	2.50	-0.94
7,526.0	91.00	358.50	6,165.7	1,778.1	-77.0	1,779.5	2.90	0.00	2.90
7,557.0	90.90	358.80	6,165.2	1,809.1	-77.8	1,810.5	1.02	-0.32	0.97
7,588.0	91.10	359.70	6,164.6	1,840.1	-78.2	1,841.5	2.97	0.65	2.90
7,619.0	91.40	0.00	6,164.0	1,871.1	-78.3	1,872.5	1.37	0.97	0.97
7,649.0	91.00	0.00	6,163.3	1,901.1	-78.3	1,902.5	1.33	-1.33	0.00
7,680.0	90.10	0.80	6,163.0	1,932.1	-78.0	1,933.4	3.88	-2.90	2.58

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well WOLF 35-2613H
Project:	SEC.35-T10N-R59W	TVD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Site:	Wolf Pad Sec.35-T10N-R59W	MD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Well:	WOLF 35-2613H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)	
7,710.0	90.00	0.40	6,163.0	1,962.1	-77.7	1,963.4	1.37	-0.33	-1.33	
7,741.0	90.80	0.90	6,162.8	1,993.1	-77.4	1,994.4	3.04	2.58	1.61	
7,772.0	90.80	1.10	6,162.4	2,024.1	-76.8	2,025.4	0.65	0.00	0.65	
7,803.0	91.00	1.10	6,161.9	2,055.1	-76.2	2,056.3	0.65	0.65	0.00	
7,834.0	91.40	1.50	6,161.2	2,086.1	-75.5	2,087.3	1.82	1.29	1.29	
7,865.0	91.20	0.60	6,160.5	2,117.1	-75.0	2,118.3	2.97	-0.65	-2.90	
7,896.0	90.70	0.80	6,160.0	2,148.0	-74.6	2,149.2	1.74	-1.61	0.65	
7,926.0	91.00	1.10	6,159.6	2,178.0	-74.1	2,179.2	1.41	1.00	1.00	
7,957.0	91.40	0.90	6,158.9	2,209.0	-73.6	2,210.2	1.44	1.29	-0.65	
7,988.0	90.70	359.70	6,158.4	2,240.0	-73.4	2,241.1	4.48	-2.26	-3.87	
8,019.0	90.60	359.20	6,158.0	2,271.0	-73.7	2,272.1	1.64	-0.32	-1.61	
8,049.0	90.10	359.00	6,157.8	2,301.0	-74.2	2,302.1	1.80	-1.67	-0.67	
8,080.0	90.30	359.00	6,157.7	2,332.0	-74.7	2,333.1	0.65	0.65	0.00	
8,111.0	90.50	358.80	6,157.5	2,363.0	-75.3	2,364.1	0.91	0.65	-0.65	
8,142.0	90.20	358.60	6,157.3	2,394.0	-76.0	2,395.1	1.16	-0.97	-0.65	
8,147.4	90.38	358.92	6,157.3	2,399.4	-76.1	2,400.6	6.64	3.23	5.81	
WP1										
8,173.0	91.20	0.40	6,156.9	2,425.0	-76.3	2,426.1	6.64	3.23	5.81	
8,204.0	91.00	0.20	6,156.3	2,456.0	-76.1	2,457.1	0.91	-0.65	-0.65	
8,235.0	90.30	0.40	6,156.0	2,487.0	-76.0	2,488.1	2.35	-2.26	0.65	
8,266.0	90.00	0.60	6,155.9	2,518.0	-75.7	2,519.1	1.16	-0.97	0.65	
8,296.0	89.40	359.70	6,156.1	2,548.0	-75.6	2,549.1	3.61	-2.00	-3.00	
8,327.0	89.60	0.40	6,156.3	2,579.0	-75.6	2,580.1	2.35	0.65	2.26	
8,358.0	89.40	0.60	6,156.6	2,610.0	-75.3	2,611.0	0.91	-0.65	0.65	
8,389.0	89.60	0.40	6,156.9	2,641.0	-75.0	2,642.0	0.91	0.65	-0.65	
8,420.0	89.80	0.40	6,157.0	2,672.0	-74.8	2,673.0	0.65	0.65	0.00	
8,451.0	90.10	0.80	6,157.1	2,703.0	-74.5	2,704.0	1.61	0.97	1.29	
8,482.0	90.40	0.60	6,156.9	2,734.0	-74.1	2,735.0	1.16	0.97	-0.65	
8,513.0	90.10	0.60	6,156.8	2,765.0	-73.8	2,765.9	0.97	-0.97	0.00	
8,544.0	89.90	359.70	6,156.8	2,796.0	-73.7	2,796.9	2.97	-0.65	-2.90	
8,575.0	89.50	359.70	6,156.9	2,827.0	-73.9	2,827.9	1.29	-1.29	0.00	
8,606.0	89.60	359.70	6,157.2	2,858.0	-74.0	2,858.9	0.32	0.32	0.00	
8,636.0	90.10	359.20	6,157.3	2,888.0	-74.3	2,888.9	2.36	1.67	-1.67	
8,667.0	90.20	359.30	6,157.2	2,919.0	-74.7	2,919.9	0.46	0.32	0.32	
8,698.0	90.60	359.30	6,157.0	2,950.0	-75.1	2,950.9	1.29	1.29	0.00	
8,729.0	90.70	359.30	6,156.6	2,981.0	-75.5	2,981.9	0.32	0.32	0.00	
8,760.0	90.40	359.20	6,156.3	3,011.9	-75.9	3,012.9	1.02	-0.97	-0.32	
8,791.0	90.70	359.20	6,156.0	3,042.9	-76.3	3,043.9	0.97	0.97	0.00	
8,822.0	91.20	359.50	6,155.5	3,073.9	-76.7	3,074.9	1.88	1.61	0.97	
8,853.0	91.50	358.60	6,154.8	3,104.9	-77.2	3,105.9	3.06	0.97	-2.90	
8,884.0	91.70	359.20	6,153.9	3,135.9	-77.8	3,136.9	2.04	0.65	1.94	
8,915.0	91.20	0.60	6,153.1	3,166.9	-77.8	3,167.8	4.79	-1.61	4.52	
8,946.0	90.70	0.80	6,152.6	3,197.9	-77.5	3,198.8	1.74	-1.61	0.65	
8,977.0	90.00	0.40	6,152.4	3,228.9	-77.1	3,229.8	2.60	-2.26	-1.29	
9,008.0	89.40	0.20	6,152.6	3,259.9	-77.0	3,260.8	2.04	-1.94	-0.65	
9,039.0	88.80	0.40	6,153.1	3,290.9	-76.8	3,291.8	2.04	-1.94	0.65	
9,069.0	88.90	0.40	6,153.7	3,320.9	-76.6	3,321.8	0.33	0.33	0.00	
9,100.0	88.80	359.90	6,154.3	3,351.9	-76.5	3,352.7	1.64	-0.32	-1.61	
9,131.0	89.00	359.30	6,154.9	3,382.9	-76.7	3,383.7	2.04	0.65	-1.94	
9,162.0	89.30	359.30	6,155.4	3,413.9	-77.1	3,414.7	0.97	0.97	0.00	
9,193.0	90.00	359.50	6,155.5	3,444.9	-77.4	3,445.7	2.35	2.26	0.65	
9,224.0	90.20	359.90	6,155.5	3,475.9	-77.6	3,476.7	1.44	0.65	1.29	
9,255.0	90.00	359.50	6,155.4	3,506.8	-77.8	3,507.7	1.44	-0.65	-1.29	
9,286.0	90.40	359.20	6,155.3	3,537.8	-78.1	3,538.7	1.61	1.29	-0.97	

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well WOLF 35-2613H
Project:	SEC.35-T10N-R59W	TVD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Site:	Wolf Pad Sec.35-T10N-R59W	MD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Well:	WOLF 35-2613H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)	
9,317.0	90.80	358.60	6,155.0	3,568.8	-78.7	3,569.7	2.33	1.29	-1.94	
9,348.0	90.30	358.50	6,154.7	3,599.8	-79.5	3,600.7	1.64	-1.61	-0.32	
9,379.0	90.70	358.10	6,154.4	3,630.8	-80.4	3,631.7	1.82	1.29	-1.29	
9,411.0	91.10	358.30	6,153.9	3,662.8	-81.4	3,663.7	1.40	1.25	0.63	
9,443.0	90.30	358.30	6,153.5	3,694.8	-82.4	3,695.7	2.50	-2.50	0.00	
9,475.0	89.30	358.30	6,153.7	3,726.8	-83.3	3,727.7	3.13	-3.13	0.00	
9,506.0	89.00	358.10	6,154.1	3,757.7	-84.3	3,758.7	1.16	-0.97	-0.65	
9,538.0	89.10	358.30	6,154.6	3,789.7	-85.3	3,790.7	0.70	0.31	0.63	
9,569.0	89.50	358.50	6,155.0	3,820.7	-86.2	3,821.7	1.44	1.29	0.65	
9,601.0	90.00	358.30	6,155.2	3,852.7	-87.1	3,853.7	1.68	1.56	-0.63	
9,633.0	90.00	357.90	6,155.2	3,884.7	-88.1	3,885.7	1.25	0.00	-1.25	
9,665.0	89.40	357.80	6,155.3	3,916.7	-89.3	3,917.7	1.90	-1.88	-0.31	
9,696.0	89.60	358.10	6,155.6	3,947.6	-90.4	3,948.7	1.16	0.65	0.97	
9,728.0	90.20	357.90	6,155.7	3,979.6	-91.5	3,980.7	1.98	1.88	-0.63	
9,760.0	90.70	357.80	6,155.4	4,011.6	-92.7	4,012.7	1.59	1.56	-0.31	
9,791.0	91.10	357.40	6,154.9	4,042.6	-94.0	4,043.7	1.82	1.29	-1.29	
9,823.0	90.30	357.40	6,154.5	4,074.5	-95.5	4,075.6	2.50	-2.50	0.00	
9,855.0	90.60	357.20	6,154.3	4,106.5	-97.0	4,107.6	1.13	0.94	-0.63	
9,886.0	90.20	357.80	6,154.1	4,137.5	-98.4	4,138.6	2.33	-1.29	1.94	
9,918.0	90.20	357.60	6,153.9	4,169.4	-99.6	4,170.6	0.62	0.00	-0.63	
9,950.0	89.80	357.60	6,153.9	4,201.4	-101.0	4,202.6	1.25	-1.25	0.00	
9,982.0	89.60	357.20	6,154.1	4,233.4	-102.4	4,234.6	1.40	-0.63	-1.25	
10,013.0	90.00	357.10	6,154.2	4,264.3	-104.0	4,265.6	1.33	1.29	-0.32	
10,045.0	90.20	356.70	6,154.2	4,296.3	-105.7	4,297.6	1.40	0.63	-1.25	
10,076.0	90.40	356.90	6,154.0	4,327.2	-107.4	4,328.6	0.91	0.65	0.65	
10,108.0	90.40	355.80	6,153.8	4,359.2	-109.5	4,360.5	3.44	0.00	-3.44	
10,140.0	90.90	356.20	6,153.4	4,391.1	-111.7	4,392.5	2.00	1.56	1.25	
10,171.0	90.90	356.20	6,152.9	4,422.0	-113.8	4,423.5	0.00	0.00	0.00	
10,203.0	90.60	356.50	6,152.5	4,453.9	-115.8	4,455.4	1.33	-0.94	0.94	
10,235.0	90.30	357.10	6,152.3	4,485.9	-117.6	4,487.4	2.10	-0.94	1.88	
10,266.0	90.70	357.60	6,152.0	4,516.9	-119.0	4,518.4	2.07	1.29	1.61	
10,298.0	90.70	356.90	6,151.6	4,548.8	-120.5	4,550.4	2.19	0.00	-2.19	
10,330.0	90.10	357.40	6,151.4	4,580.8	-122.1	4,582.4	2.44	-1.88	1.56	
10,361.0	90.10	357.90	6,151.3	4,611.8	-123.4	4,613.4	1.61	0.00	1.61	
10,393.0	90.30	358.50	6,151.2	4,643.7	-124.4	4,645.4	1.98	0.63	1.88	
10,425.0	90.40	357.60	6,151.0	4,675.7	-125.5	4,677.4	2.83	0.31	-2.81	
10,456.0	90.90	357.80	6,150.7	4,706.7	-126.7	4,708.4	1.74	1.61	0.65	
10,488.0	91.00	357.60	6,150.1	4,738.7	-128.0	4,740.4	0.70	0.31	-0.63	
10,520.0	89.70	358.10	6,149.9	4,770.6	-129.2	4,772.4	4.35	-4.06	1.56	
10,552.0	88.50	358.50	6,150.4	4,802.6	-130.2	4,804.4	3.95	-3.75	1.25	
10,583.0	87.10	357.80	6,151.6	4,833.6	-131.2	4,835.3	5.05	-4.52	-2.26	
10,615.0	87.80	358.80	6,153.1	4,865.5	-132.1	4,867.3	3.81	2.19	3.13	
10,646.0	87.70	357.90	6,154.3	4,896.5	-133.0	4,898.3	2.92	-0.32	-2.90	
10,678.0	87.50	357.90	6,155.6	4,928.4	-134.2	4,930.3	0.63	-0.63	0.00	
10,710.0	88.20	357.60	6,156.8	4,960.4	-135.4	4,962.2	2.38	2.19	-0.94	
10,741.0	88.10	358.60	6,157.8	4,991.4	-136.5	4,993.2	3.24	-0.32	3.23	
10,773.0	88.40	358.30	6,158.8	5,023.3	-137.3	5,025.2	1.33	0.94	-0.94	
10,805.0	88.60	358.10	6,159.6	5,055.3	-138.3	5,057.2	0.88	0.63	-0.63	
10,836.0	89.00	359.50	6,160.3	5,086.3	-139.0	5,088.2	4.70	1.29	4.52	
10,868.0	90.30	359.70	6,160.5	5,118.3	-139.2	5,120.2	4.11	4.06	0.63	
10,900.0	90.10	359.70	6,160.4	5,150.3	-139.4	5,152.2	0.63	-0.63	0.00	
10,932.0	89.40	358.30	6,160.5	5,182.3	-139.9	5,184.2	4.89	-2.19	-4.38	
10,963.0	90.00	358.60	6,160.7	5,213.3	-140.8	5,215.2	2.16	1.94	0.97	
10,995.0	90.40	359.50	6,160.6	5,245.3	-141.3	5,247.2	3.08	1.25	2.81	

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well WOLF 35-2613H
Project:	SEC.35-T10N-R59W	TVD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Site:	Wolf Pad Sec.35-T10N-R59W	MD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Well:	WOLF 35-2613H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
11,026.0	89.70	358.50	6,160.5	5,276.3	-141.9	5,278.2	3.94	-2.26	-3.23
11,058.0	89.70	358.50	6,160.7	5,308.3	-142.7	5,310.2	0.00	0.00	0.00
11,072.0	89.90	359.50	6,160.7	5,322.3	-142.9	5,324.2	7.28	1.43	7.14
11,104.0	90.40	1.30	6,160.7	5,354.3	-142.7	5,356.1	5.84	1.56	5.63
11,135.0	90.40	1.10	6,160.4	5,385.2	-142.1	5,387.1	0.65	0.00	-0.65
11,167.0	89.40	0.20	6,160.5	5,417.2	-141.7	5,419.1	4.20	-3.13	-2.81
11,199.0	90.10	0.60	6,160.6	5,449.2	-141.5	5,451.1	2.52	2.19	1.25
11,230.0	90.30	0.00	6,160.5	5,480.2	-141.3	5,482.1	2.04	0.65	-1.94
11,262.0	89.90	359.90	6,160.5	5,512.2	-141.3	5,514.0	1.29	-1.25	-0.31
11,294.0	89.80	359.20	6,160.6	5,544.2	-141.6	5,546.0	2.21	-0.31	-2.19
11,325.0	90.30	359.30	6,160.5	5,575.2	-142.0	5,577.0	1.64	1.61	0.32
11,357.0	90.00	358.60	6,160.4	5,607.2	-142.6	5,609.0	2.38	-0.94	-2.19
11,388.0	90.00	357.40	6,160.4	5,638.2	-143.7	5,640.0	3.87	0.00	-3.87
11,420.0	90.00	356.90	6,160.4	5,670.2	-145.3	5,672.0	1.56	0.00	-1.56
11,452.0	90.10	356.00	6,160.4	5,702.1	-147.2	5,704.0	2.83	0.31	-2.81
11,483.0	89.90	357.20	6,160.4	5,733.1	-149.1	5,735.0	3.92	-0.65	3.87
11,515.0	90.00	357.20	6,160.4	5,765.0	-150.6	5,767.0	0.31	0.31	0.00
11,547.0	90.30	359.00	6,160.4	5,797.0	-151.7	5,799.0	5.70	0.94	5.63
11,578.0	90.20	357.90	6,160.2	5,828.0	-152.5	5,830.0	3.56	-0.32	-3.55
11,610.0	89.70	356.70	6,160.3	5,859.9	-154.0	5,862.0	4.06	-1.56	-3.75
11,641.0	90.10	358.80	6,160.3	5,890.9	-155.3	5,893.0	6.90	1.29	6.77
11,673.0	91.20	0.40	6,159.9	5,922.9	-155.5	5,924.9	6.07	3.44	5.00
11,705.0	91.50	0.60	6,159.2	5,954.9	-155.2	5,956.9	1.13	0.94	0.63
11,736.0	92.10	0.00	6,158.2	5,985.9	-155.0	5,987.9	2.74	1.94	-1.94
11,768.0	92.60	0.20	6,156.9	6,017.9	-155.0	6,019.9	1.68	1.56	0.63
11,800.0	90.40	359.50	6,156.1	6,049.9	-155.1	6,051.8	7.21	-6.88	-2.19
11,831.0	87.90	358.50	6,156.5	6,080.8	-155.6	6,082.8	8.69	-8.06	-3.23
11,863.0	88.10	358.60	6,157.6	6,112.8	-156.4	6,114.8	0.70	0.63	0.31
11,894.0	89.30	359.50	6,158.3	6,143.8	-156.9	6,145.8	4.84	3.87	2.90
11,926.0	89.70	0.00	6,158.6	6,175.8	-157.1	6,177.8	2.00	1.25	1.56
11,958.0	89.90	359.30	6,158.7	6,207.8	-157.3	6,209.8	2.28	0.63	-2.19
11,989.0	90.10	359.70	6,158.7	6,238.8	-157.5	6,240.8	1.44	0.65	1.29
12,021.0	90.40	359.20	6,158.6	6,270.8	-157.8	6,272.8	1.82	0.94	-1.56
12,053.0	90.70	359.70	6,158.3	6,302.8	-158.2	6,304.8	1.82	0.94	1.56
12,084.0	90.70	359.20	6,157.9	6,333.8	-158.5	6,335.8	1.61	0.00	-1.61
12,116.0	90.30	359.70	6,157.6	6,365.8	-158.8	6,367.8	2.00	-1.25	1.56
12,147.0	89.70	0.00	6,157.6	6,396.8	-158.8	6,398.8	2.16	-1.94	0.97
12,179.0	90.20	359.70	6,157.7	6,428.8	-158.9	6,430.7	1.82	1.56	-0.94
12,210.0	90.40	359.70	6,157.5	6,459.8	-159.1	6,461.7	0.65	0.65	0.00
12,242.0	90.70	359.70	6,157.2	6,491.8	-159.3	6,493.7	0.94	0.94	0.00
12,274.0	91.10	0.40	6,156.7	6,523.8	-159.2	6,525.7	2.52	1.25	2.19
12,305.0	91.60	0.20	6,156.0	6,554.8	-159.1	6,556.7	1.74	1.61	-0.65
12,336.0	90.70	359.90	6,155.3	6,585.8	-159.0	6,587.7	3.06	-2.90	-0.97
12,368.0	88.30	0.60	6,155.6	6,617.8	-158.9	6,619.7	7.81	-7.50	2.19
12,400.0	88.40	0.20	6,156.5	6,649.7	-158.7	6,651.6	1.29	0.31	-1.25
12,431.0	89.60	359.50	6,157.1	6,680.7	-158.8	6,682.6	4.48	3.87	-2.26
12,463.0	90.30	357.80	6,157.1	6,712.7	-159.5	6,714.6	5.75	2.19	-5.31
12,495.0	90.80	357.60	6,156.8	6,744.7	-160.8	6,746.6	1.68	1.56	-0.63
12,526.0	90.70	357.80	6,156.4	6,775.7	-162.0	6,777.6	0.72	-0.32	0.65
12,557.0	89.30	357.90	6,156.4	6,806.6	-163.2	6,808.6	4.53	-4.52	0.32
12,588.0	88.60	358.10	6,157.0	6,837.6	-164.3	6,839.6	2.35	-2.26	0.65
12,605.0	89.30	358.50	6,157.3	6,854.6	-164.8	6,856.6	4.74	4.12	2.35
12,655.0	90.00	358.50	6,157.6	6,904.6	-166.1	6,906.6	1.40	1.40	0.00
BHL 660'FWL & 2008'FSL - WP2 660'FWL & 1973'FNL									

Company:	Whiting Oil & Gas	Local Co-ordinate Reference:	Well WOLF 35-2613H
Project:	SEC.35-T10N-R59W	TVD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Site:	Wolf Pad Sec.35-T10N-R59W	MD Reference:	RKB Cade @ 5031.5ft (Cade 21 KB 16.5)
Well:	WOLF 35-2613H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------