



WHITING PETROLEUM CORP.

Project: Weld County, CO
Site: Sec 8-T10N-R57W
Well: Horsetail #08C-1708
Wellbore: Sidetrack #1
Design: Plan #1



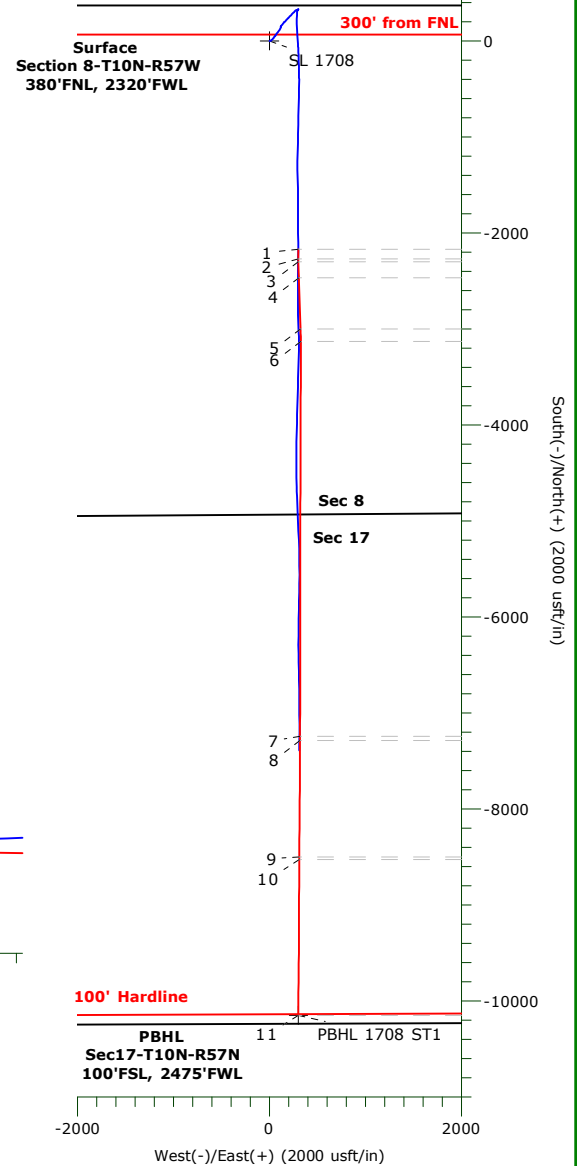
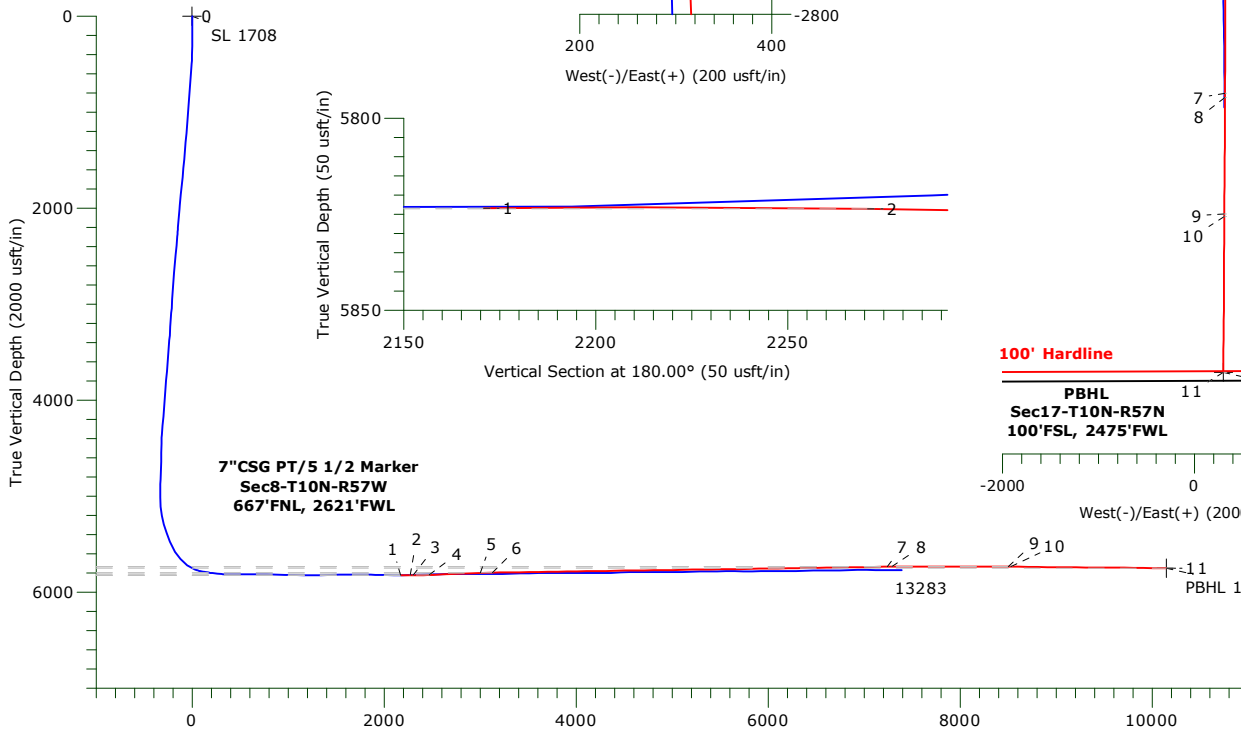
Precision
Directional Services

MWD CORRECTION

WILL BE PROVIDED BY MAGVAR

LEGEND

- Horsetail #08C-1708, Original Hole, Original Hole V0
- Plan #1



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 1708	0.00	0.00	0.00	1560699.44	3476580.88	40° 51' 35.230 N	103° 46' 37.300 W	Point
PBHL 1708 ST1	5750.00	-10148.97	300.57	1550558.22	3477078.58	40° 49' 54.950 N	103° 46' 33.390 W	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	8060.00	90.69	180.20	5823.49	-2170.80	298.30	0.00	0.00	2170.80	
2	8160.00	89.16	178.92	5823.61	-2270.79	299.07	2.00	-140.00	2270.79	
3	8190.00	89.16	178.92	5824.05	-2300.78	299.64	0.00	0.00	2300.78	
4	8355.86	92.35	178.00	5821.86	-2466.54	304.09	2.00	-16.08	2466.54	
5	8890.09	92.35	178.00	5799.96	-3000.00	322.72	0.00	0.00	3000.00	
6	9019.09	90.85	180.10	5796.35	-3128.92	324.86	2.00	125.52	3128.92	
7	13133.63	90.85	180.10	5735.32	-7243.00	317.68	0.00	0.00	7243.00	
8	13177.79	90.00	180.34	5734.99	-7287.16	317.51	2.00	164.23	7287.16	
9	14390.69	90.00	180.34	5734.99	-8500.03	310.31	0.00	0.00	8500.03	
10	14416.98	89.47	180.34	5735.11	-8526.32	310.16	2.00	-179.83	8526.32	
11	16039.72	89.47	180.34	5750.00	-10148.97	300.57	0.00	0.00	10148.97	PBHL 1708 ST1

WHITING PETROLEUM CORP.

**Weld County, CO
Sec 8-T10N-R57W
Horsetail #08C-1708**

Sidetrack #1

Plan: Plan #1

Standard Planning Report

14 May, 2016

Precision Drilling Corporation

Planning Report

Database:	Local2	Local Co-ordinate Reference:	Well Horsetail #08C-1708
Company:	WHITING PETROLEUM CORP.	TVD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Project:	Weld County, CO	MD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Site:	Sec 8-T10N-R57W	North Reference:	True
Well:	Horsetail #08C-1708	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack #1		
Design:	Plan #1		

Project	Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						Sec 8-T10N-R57W											
Site Position:			Northing:			1,561,022.64 usft			Latitude:			40° 51' 38.869 N					
From:			Lat/Long			Easting:			3,474,249.13 usft			Longitude:			103° 47' 7.559 W		
Position Uncertainty:			0.00 usft			Slot Radius:			13.20 in			Grid Convergence:			1.11		

Well	Horsetail #08C-1708					
Well Position	+N-S	-368.22 usft	Northing:	1,560,699.44 usft	Latitude:	40° 51' 35.230 N
	+E-W	2,325.06 usft	Easting:	3,476,580.88 usft	Longitude:	103° 46' 37.300 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,912.50 usft

Wellbore	Sidetrack #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/14/2016	7.82	67.40	52,854

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	8,060.00	
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.00	0.00	0.00	180.00	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
8,060.00	90.69	180.20	5,823.49	-2,170.80	298.30	0.00	0.00	0.00	0.00	
8,160.00	89.16	178.92	5,823.61	-2,270.79	299.07	2.00	-1.53	-1.29	-140.00	
8,190.00	89.16	178.92	5,824.05	-2,300.78	299.64	0.00	0.00	0.00	0.00	
8,355.86	92.35	178.00	5,821.86	-2,466.54	304.09	2.00	1.92	-0.55	-16.08	
8,890.09	92.35	178.00	5,799.96	-3,000.00	322.72	0.00	0.00	0.00	0.00	
9,019.09	90.85	180.10	5,796.35	-3,128.92	324.86	2.00	-1.16	1.63	125.52	
13,133.63	90.85	180.10	5,735.32	-7,243.00	317.68	0.00	0.00	0.00	0.00	
13,177.79	90.00	180.34	5,734.99	-7,287.16	317.51	2.00	-1.92	0.54	164.23	
14,390.69	90.00	180.34	5,734.99	-8,500.03	310.31	0.00	0.00	0.00	0.00	
14,416.98	89.47	180.34	5,735.11	-8,526.32	310.16	2.00	-2.00	-0.01	-179.83	
16,039.72	89.47	180.34	5,750.00	-10,148.97	300.57	0.00	0.00	0.00	0.00	PBHL 1708 ST1

Precision Drilling Corporation

Planning Report

Database:	Local2	Local Co-ordinate Reference:	Well Horsetail #08C-1708
Company:	WHITING PETROLEUM CORP.	TVD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Project:	Weld County, CO	MD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Site:	Sec 8-T10N-R57W	North Reference:	True
Well:	Horsetail #08C-1708	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack #1		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.00	0.71	125.76	130.00	-0.47	0.65	0.47	0.55	0.55	0.00
222.00	1.15	139.10	221.98	-1.50	1.72	1.50	0.53	0.48	14.50
313.00	2.23	78.66	312.95	-1.84	4.05	1.84	2.13	1.19	-66.42
405.00	3.44	55.30	404.84	0.08	8.08	-0.08	1.79	1.32	-25.39
496.00	6.20	49.57	495.51	4.82	14.07	-4.82	3.08	3.03	-6.30
588.00	6.32	48.72	586.96	11.38	21.65	-11.38	0.16	0.13	-0.92
678.00	6.22	51.08	676.42	17.72	29.17	-17.72	0.31	-0.11	2.62
769.00	6.22	40.24	766.89	24.58	36.19	-24.58	1.29	0.00	-11.91
860.00	5.74	37.69	857.39	31.94	42.16	-31.94	0.60	-0.53	-2.80
951.00	5.26	38.72	947.97	38.80	47.55	-38.80	0.54	-0.53	1.13
1,042.00	5.12	38.36	1,038.60	45.23	52.68	-45.23	0.16	-0.15	-0.40
1,134.00	5.15	42.29	1,130.23	51.51	58.00	-51.51	0.38	0.03	4.27
1,226.00	5.98	31.82	1,221.80	58.63	63.31	-58.63	1.42	0.90	-11.38
1,317.00	5.83	34.94	1,312.32	66.45	68.45	-66.45	0.39	-0.16	3.43
1,409.00	6.06	34.89	1,403.82	74.26	73.91	-74.26	0.25	0.25	-0.05
1,500.00	6.30	36.65	1,494.29	82.21	79.64	-82.21	0.34	0.26	1.93
1,591.00	6.54	39.05	1,584.72	90.24	85.88	-90.24	0.40	0.26	2.64
1,683.00	7.57	37.82	1,676.03	99.10	92.90	-99.10	1.13	1.12	-1.34
1,774.00	6.85	35.90	1,766.31	108.23	99.76	-108.23	0.83	-0.79	-2.11
1,866.00	6.05	29.77	1,857.72	116.88	105.38	-116.88	1.15	-0.87	-6.66
1,975.00	5.64	23.13	1,966.16	126.79	110.34	-126.79	0.72	-0.38	-6.09
2,022.00	5.35	22.55	2,012.94	130.94	112.08	-130.94	0.63	-0.62	-1.23
2,210.00	4.75	11.46	2,200.22	146.66	116.99	-146.66	0.61	-0.32	-5.90
2,305.00	6.45	38.62	2,294.78	154.69	121.10	-154.69	3.27	1.79	28.59
2,399.00	6.01	33.25	2,388.22	162.93	127.10	-162.93	0.78	-0.47	-5.71
2,494.00	5.89	32.21	2,482.71	171.21	132.42	-171.21	0.17	-0.13	-1.09
2,681.00	6.43	44.29	2,668.64	186.83	144.85	-186.83	0.75	0.29	6.46
2,775.00	5.90	43.80	2,762.09	194.08	151.87	-194.08	0.57	-0.56	-0.52
2,870.00	5.54	44.16	2,856.62	200.90	158.44	-200.90	0.38	-0.38	0.38
2,965.00	5.12	38.07	2,951.21	207.52	164.25	-207.52	0.74	-0.44	-6.41
3,059.00	4.75	40.12	3,044.86	213.80	169.35	-213.80	0.44	-0.39	2.18
3,153.00	6.16	48.38	3,138.43	220.13	175.62	-220.13	1.71	1.50	8.79
3,248.00	5.32	45.11	3,232.96	226.62	182.56	-226.62	0.95	-0.88	-3.44
3,342.00	5.23	42.76	3,326.56	232.84	188.55	-232.84	0.25	-0.10	-2.50
3,436.00	7.03	44.86	3,420.02	240.07	195.52	-240.07	1.93	1.91	2.23
3,530.00	6.33	44.51	3,513.38	247.84	203.21	-247.84	0.75	-0.74	-0.37
3,625.00	6.73	43.32	3,607.76	255.62	210.70	-255.62	0.44	0.42	-1.25
3,719.00	6.32	45.43	3,701.15	263.26	218.16	-263.26	0.51	-0.44	2.24
3,814.00	6.51	43.46	3,795.56	270.84	225.59	-270.84	0.31	0.20	-2.07
3,908.00	6.49	44.74	3,888.95	278.48	233.00	-278.48	0.16	-0.02	1.36
4,002.00	6.03	44.56	3,982.39	285.77	240.20	-285.77	0.49	-0.49	-0.19
4,097.00	5.85	45.92	4,076.88	292.70	247.18	-292.70	0.24	-0.19	1.43
4,191.00	5.86	46.01	4,170.39	299.36	254.07	-299.36	0.01	0.01	0.10
4,286.00	6.72	44.43	4,264.82	306.70	261.45	-306.70	0.92	0.91	-1.66
4,380.00	6.07	44.33	4,358.24	314.18	268.78	-314.18	0.69	-0.69	-0.11
4,475.00	4.64	63.18	4,452.83	319.51	275.72	-319.51	2.37	-1.51	19.84
4,569.00	4.75	74.22	4,546.51	322.28	282.86	-322.28	0.97	0.12	11.74
4,663.00	3.58	88.33	4,640.26	323.43	289.54	-323.43	1.65	-1.24	15.01
4,757.00	3.17	66.66	4,734.11	324.54	294.86	-324.54	1.42	-0.44	-23.05
4,851.00	3.14	23.40	4,827.98	327.94	298.26	-327.94	2.47	-0.03	-46.02
4,945.00	2.02	4.24	4,921.88	331.95	299.41	-331.95	1.49	-1.19	-20.38
5,039.00	1.82	217.10	5,015.86	332.41	298.63	-332.41	3.92	-0.21	-156.53
5,134.00	5.94	215.50	5,110.62	327.20	294.87	-327.20	4.34	4.34	-1.68

Precision Drilling Corporation

Planning Report

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Wellbore:	Sidetrack #1		
Design:	Plan #1		

Planned Survey									
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5,228.00	9.95	194.34	5,203.72	315.37	290.03	-315.37	5.21	4.27	-22.51
5,322.00	15.88	185.97	5,295.31	294.69	286.67	-294.69	6.60	6.31	-8.90
5,417.00	20.24	184.60	5,385.61	265.37	284.00	-265.37	4.61	4.59	-1.44
5,511.00	23.04	179.37	5,472.98	230.76	282.90	-230.76	3.61	2.98	-5.56
5,629.00	30.81	179.95	5,578.11	177.37	283.18	-177.37	6.59	6.58	0.49
5,724.00	40.16	178.23	5,655.38	122.30	284.15	-122.30	9.90	9.84	-1.81
5,818.00	53.73	175.52	5,719.41	53.90	288.07	-53.90	14.59	14.44	-2.88
5,912.00	70.15	174.71	5,763.48	-28.47	295.15	28.47	17.48	17.47	-0.86
6,007.00	80.35	177.72	5,787.64	-120.01	301.15	120.01	11.16	10.74	3.17
6,101.00	83.39	179.05	5,800.93	-213.01	303.77	213.01	3.52	3.23	1.41
6,196.00	84.73	178.03	5,810.76	-307.47	306.18	307.47	1.77	1.41	-1.07
6,290.00	90.47	179.59	5,814.70	-401.32	308.12	401.32	6.33	6.11	1.66
6,384.00	90.39	180.90	5,813.99	-495.32	307.72	495.32	1.40	-0.09	1.39
6,479.00	89.29	181.40	5,814.26	-590.30	305.82	590.30	1.27	-1.16	0.53
6,573.00	90.16	181.51	5,814.71	-684.26	303.43	684.26	0.93	0.93	0.12
6,668.00	88.69	181.52	5,815.66	-779.22	300.92	779.22	1.55	-1.55	0.01
6,762.00	88.90	181.19	5,817.64	-873.18	298.69	873.18	0.42	0.22	-0.35
6,856.00	89.76	180.68	5,818.74	-967.16	297.16	967.16	1.06	0.91	-0.54
6,951.00	88.15	181.56	5,820.47	-1,062.12	295.30	1,062.12	1.93	-1.69	0.93
7,045.00	88.52	181.96	5,823.20	-1,156.03	292.42	1,156.03	0.58	0.39	0.43
7,139.00	90.50	180.16	5,824.00	-1,250.01	290.68	1,250.01	2.85	2.11	-1.91
7,233.00	91.31	178.86	5,822.52	-1,343.99	291.48	1,343.99	1.63	0.86	-1.38
7,328.00	91.97	178.59	5,819.80	-1,438.92	293.60	1,438.92	0.75	0.69	-0.28
7,422.00	90.38	179.24	5,817.87	-1,532.88	295.38	1,532.88	1.83	-1.69	0.69
7,517.00	90.66	179.14	5,817.01	-1,627.87	296.72	1,627.87	0.31	0.29	-0.11
7,611.00	89.38	180.07	5,816.98	-1,721.87	297.37	1,721.87	1.68	-1.36	0.99
7,705.00	89.93	179.72	5,817.54	-1,815.86	297.54	1,815.86	0.69	0.59	-0.37
7,799.00	88.45	180.01	5,818.87	-1,909.85	297.76	1,909.85	1.60	-1.57	0.31
7,894.00	88.77	180.00	5,821.18	-2,004.82	297.75	2,004.82	0.34	0.34	-0.01
7,988.00	88.80	179.53	5,823.17	-2,098.80	298.14	2,098.80	0.50	0.03	-0.50
8,060.00	90.69	180.20	5,823.49	-2,170.80	298.30	2,170.80	2.79	2.63	0.94
8,100.00	90.08	179.69	5,823.22	-2,210.79	298.34	2,210.79	2.00	-1.53	-1.29
8,160.00	89.16	178.92	5,823.61	-2,270.79	299.07	2,270.79	2.00	-1.53	-1.29
8,190.00	89.16	178.92	5,824.05	-2,300.78	299.64	2,300.78	0.00	0.00	0.00
8,200.00	89.35	178.86	5,824.18	-2,310.78	299.83	2,310.78	2.00	1.92	-0.55
8,300.00	91.28	178.31	5,823.63	-2,410.74	302.30	2,410.74	2.00	1.92	-0.55
8,355.86	92.35	178.00	5,821.86	-2,466.54	304.09	2,466.54	2.00	1.92	-0.55
8,400.00	92.35	178.00	5,820.05	-2,510.62	305.63	2,510.62	0.00	0.00	0.00
8,500.00	92.35	178.00	5,815.95	-2,610.47	309.12	2,610.47	0.00	0.00	0.00
8,600.00	92.35	178.00	5,811.85	-2,710.33	312.61	2,710.33	0.00	0.00	0.00
8,700.00	92.35	178.00	5,807.75	-2,810.18	316.09	2,810.18	0.00	0.00	0.00
8,800.00	92.35	178.00	5,803.65	-2,910.04	319.58	2,910.04	0.00	0.00	0.00
8,890.09	92.35	178.00	5,799.96	-3,000.00	322.72	3,000.00	0.00	0.00	0.00
8,900.00	92.23	178.16	5,799.56	-3,009.89	323.05	3,009.89	2.00	-1.16	1.63
9,000.00	91.07	179.79	5,796.67	-3,109.83	324.84	3,109.83	2.00	-1.16	1.63
9,019.09	90.85	180.10	5,796.35	-3,128.92	324.86	3,128.92	2.00	-1.16	1.63
9,100.00	90.85	180.10	5,795.15	-3,209.82	324.72	3,209.82	0.00	0.00	0.00
9,200.00	90.85	180.10	5,793.67	-3,309.81	324.54	3,309.81	0.00	0.00	0.00
9,300.00	90.85	180.10	5,792.19	-3,409.80	324.37	3,409.80	0.00	0.00	0.00
9,400.00	90.85	180.10	5,790.70	-3,509.79	324.19	3,509.79	0.00	0.00	0.00
9,500.00	90.85	180.10	5,789.22	-3,609.77	324.02	3,609.77	0.00	0.00	0.00
9,600.00	90.85	180.10	5,787.74	-3,709.76	323.84	3,709.76	0.00	0.00	0.00
9,700.00	90.85	180.10	5,786.25	-3,809.75	323.67	3,809.75	0.00	0.00	0.00
9,800.00	90.85	180.10	5,784.77	-3,909.74	323.50	3,909.74	0.00	0.00	0.00

Precision Drilling Corporation

Planning Report

Database:	Local2	Local Co-ordinate Reference:	Well Horsetail #08C-1708
Company:	WHITING PETROLEUM CORP.	TVD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Project:	Weld County, CO	MD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Site:	Sec 8-T10N-R57W	North Reference:	True
Well:	Horsetail #08C-1708	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack #1		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,900.00	90.85	180.10	5,783.29	-4,009.73	323.32	4,009.73	0.00	0.00	0.00
10,000.00	90.85	180.10	5,781.80	-4,109.72	323.15	4,109.72	0.00	0.00	0.00
10,100.00	90.85	180.10	5,780.32	-4,209.71	322.97	4,209.71	0.00	0.00	0.00
10,200.00	90.85	180.10	5,778.84	-4,309.70	322.80	4,309.70	0.00	0.00	0.00
10,300.00	90.85	180.10	5,777.35	-4,409.69	322.62	4,409.69	0.00	0.00	0.00
10,400.00	90.85	180.10	5,775.87	-4,509.67	322.45	4,509.67	0.00	0.00	0.00
10,500.00	90.85	180.10	5,774.39	-4,609.66	322.27	4,609.66	0.00	0.00	0.00
10,600.00	90.85	180.10	5,772.90	-4,709.65	322.10	4,709.65	0.00	0.00	0.00
10,700.00	90.85	180.10	5,771.42	-4,809.64	321.93	4,809.64	0.00	0.00	0.00
10,800.00	90.85	180.10	5,769.94	-4,909.63	321.75	4,909.63	0.00	0.00	0.00
10,900.00	90.85	180.10	5,768.45	-5,009.62	321.58	5,009.62	0.00	0.00	0.00
11,000.00	90.85	180.10	5,766.97	-5,109.61	321.40	5,109.61	0.00	0.00	0.00
11,100.00	90.85	180.10	5,765.48	-5,209.60	321.23	5,209.60	0.00	0.00	0.00
11,200.00	90.85	180.10	5,764.00	-5,309.59	321.05	5,309.59	0.00	0.00	0.00
11,300.00	90.85	180.10	5,762.52	-5,409.57	320.88	5,409.57	0.00	0.00	0.00
11,400.00	90.85	180.10	5,761.03	-5,509.56	320.70	5,509.56	0.00	0.00	0.00
11,500.00	90.85	180.10	5,759.55	-5,609.55	320.53	5,609.55	0.00	0.00	0.00
11,600.00	90.85	180.10	5,758.07	-5,709.54	320.35	5,709.54	0.00	0.00	0.00
11,700.00	90.85	180.10	5,756.58	-5,809.53	320.18	5,809.53	0.00	0.00	0.00
11,800.00	90.85	180.10	5,755.10	-5,909.52	320.01	5,909.52	0.00	0.00	0.00
11,900.00	90.85	180.10	5,753.62	-6,009.51	319.83	6,009.51	0.00	0.00	0.00
12,000.00	90.85	180.10	5,752.13	-6,109.50	319.66	6,109.50	0.00	0.00	0.00
12,100.00	90.85	180.10	5,750.65	-6,209.48	319.48	6,209.48	0.00	0.00	0.00
12,200.00	90.85	180.10	5,749.17	-6,309.47	319.31	6,309.47	0.00	0.00	0.00
12,300.00	90.85	180.10	5,747.68	-6,409.46	319.13	6,409.46	0.00	0.00	0.00
12,400.00	90.85	180.10	5,746.20	-6,509.45	318.96	6,509.45	0.00	0.00	0.00
12,500.00	90.85	180.10	5,744.72	-6,609.44	318.78	6,609.44	0.00	0.00	0.00
12,600.00	90.85	180.10	5,743.23	-6,709.43	318.61	6,709.43	0.00	0.00	0.00
12,700.00	90.85	180.10	5,741.75	-6,809.42	318.44	6,809.42	0.00	0.00	0.00
12,800.00	90.85	180.10	5,740.27	-6,909.41	318.26	6,909.41	0.00	0.00	0.00
12,900.00	90.85	180.10	5,738.78	-7,009.40	318.09	7,009.40	0.00	0.00	0.00
13,000.00	90.85	180.10	5,737.30	-7,109.38	317.91	7,109.38	0.00	0.00	0.00
13,100.00	90.85	180.10	5,735.82	-7,209.37	317.74	7,209.37	0.00	0.00	0.00
13,133.63	90.85	180.10	5,735.32	-7,243.00	317.68	7,243.00	0.00	0.00	0.00
13,177.79	90.00	180.34	5,734.99	-7,287.16	317.51	7,287.16	2.00	-1.92	0.54
13,200.00	90.00	180.34	5,734.99	-7,309.37	317.38	7,309.37	0.00	0.00	0.00
13,300.00	90.00	180.34	5,734.99	-7,409.37	316.78	7,409.37	0.00	0.00	0.00
13,400.00	90.00	180.34	5,734.99	-7,509.36	316.19	7,509.36	0.00	0.00	0.00
13,500.00	90.00	180.34	5,734.99	-7,609.36	315.60	7,609.36	0.00	0.00	0.00
13,600.00	90.00	180.34	5,734.99	-7,709.36	315.00	7,709.36	0.00	0.00	0.00
13,700.00	90.00	180.34	5,734.99	-7,809.36	314.41	7,809.36	0.00	0.00	0.00
13,800.00	90.00	180.34	5,734.99	-7,909.36	313.82	7,909.36	0.00	0.00	0.00
13,900.00	90.00	180.34	5,734.99	-8,009.35	313.22	8,009.35	0.00	0.00	0.00
14,000.00	90.00	180.34	5,734.99	-8,109.35	312.63	8,109.35	0.00	0.00	0.00
14,100.00	90.00	180.34	5,734.99	-8,209.35	312.04	8,209.35	0.00	0.00	0.00
14,200.00	90.00	180.34	5,734.99	-8,309.35	311.44	8,309.35	0.00	0.00	0.00
14,300.00	90.00	180.34	5,734.99	-8,409.35	310.85	8,409.35	0.00	0.00	0.00
14,390.69	90.00	180.34	5,734.99	-8,500.03	310.31	8,500.03	0.00	0.00	0.00
14,400.00	89.81	180.34	5,735.00	-8,509.35	310.26	8,509.35	2.00	-2.00	-0.01
14,416.98	89.47	180.34	5,735.11	-8,526.32	310.16	8,526.32	2.00	-2.00	-0.01
14,500.00	89.47	180.34	5,735.87	-8,609.34	309.67	8,609.34	0.00	0.00	0.00
14,600.00	89.47	180.34	5,736.79	-8,709.33	309.07	8,709.33	0.00	0.00	0.00
14,700.00	89.47	180.34	5,737.71	-8,809.33	308.48	8,809.33	0.00	0.00	0.00
14,800.00	89.47	180.34	5,738.62	-8,909.32	307.89	8,909.32	0.00	0.00	0.00

Precision Drilling Corporation

Planning Report

Database:	Local2	Local Co-ordinate Reference:	Well Horsetail #08C-1708
Company:	WHITING PETROLEUM CORP.	TVD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Project:	Weld County, CO	MD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Site:	Sec 8-T10N-R57W	North Reference:	True
Well:	Horsetail #08C-1708	Survey Calculation Method:	Minimum Curvature
Wellbore:	Sidetrack #1		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,900.00	89.47	180.34	5,739.54	-9,009.32	307.30	9,009.32	0.00	0.00	0.00	
15,000.00	89.47	180.34	5,740.46	-9,109.31	306.71	9,109.31	0.00	0.00	0.00	
15,100.00	89.47	180.34	5,741.38	-9,209.30	306.12	9,209.30	0.00	0.00	0.00	
15,200.00	89.47	180.34	5,742.29	-9,309.30	305.53	9,309.30	0.00	0.00	0.00	
15,300.00	89.47	180.34	5,743.21	-9,409.29	304.94	9,409.29	0.00	0.00	0.00	
15,400.00	89.47	180.34	5,744.13	-9,509.29	304.35	9,509.29	0.00	0.00	0.00	
15,500.00	89.47	180.34	5,745.05	-9,609.28	303.76	9,609.28	0.00	0.00	0.00	
15,600.00	89.47	180.34	5,745.97	-9,709.28	303.17	9,709.28	0.00	0.00	0.00	
15,700.00	89.47	180.34	5,746.88	-9,809.27	302.58	9,809.27	0.00	0.00	0.00	
15,800.00	89.47	180.34	5,747.80	-9,909.26	301.99	9,909.26	0.00	0.00	0.00	
15,900.00	89.47	180.34	5,748.72	-10,009.26	301.40	10,009.26	0.00	0.00	0.00	
16,000.00	89.47	180.34	5,749.64	-10,109.25	300.80	10,109.25	0.00	0.00	0.00	
16,039.72	89.47	180.34	5,750.00	-10,148.97	300.57	10,148.97	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SL 1708	0.00	0.00	0.00	0.00	0.00	1,560,699.44	3,476,580.88	40° 51' 35.230 N	103° 46' 37.300 W	
- hit/miss target										
- plan hits target center										
- Point										
PBHL 1708 ST1	0.00	0.00	5,750.00	-10,148.97	300.57	1,550,558.23	3,477,078.58	40° 49' 54.950 N	103° 46' 33.390 W	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
8,060.00	5,823.49	-2,170.80	298.30	1	
8,160.00	5,823.61	-2,270.79	299.07	2	
8,190.00	5,824.05	-2,300.78	299.64	3	
8,355.86	5,821.86	-2,466.54	304.09	4	
8,890.09	5,799.96	-3,000.00	322.72	5	
9,019.09	5,796.35	-3,128.92	324.86	6	
13,133.63	5,735.32	-7,243.00	317.68	7	
13,177.79	5,734.99	-7,287.16	317.51	8	
14,390.69	5,734.99	-8,500.03	310.31	9	
14,416.98	5,735.11	-8,526.32	310.16	10	
16,039.72	5,750.00	-10,148.97	300.57	11	

WHITING PETROLEUM CORP.

Weld County, CO

Sec 8-T10N-R57W

Horsetail #08C-1708

Sidetrack #1

Plan #1

Anticollision Report

14 May, 2016

Precision Drilling Corporation

Anticollision Report

Company:	WHITING PETROLEUM CORP.	Local Co-ordinate Reference:	Well Horsetail #08C-1708
Project:	Weld County, CO	TVD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Reference Site:	Sec 8-T10N-R57W	MD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Horsetail #08C-1708	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.79 sigma
Reference Wellbore	Sidetrack #1	Database:	Local2
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	8,060.00 to 16,039.06usft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.00 us	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.79 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	5/14/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
130.00	8,060.00	Survey #1 (Original Hole)	MWD+IFR1+MS	Fixed:v2:crustal dec & 3-axis correction	
8,060.00	16,039.72	Plan #1 (Sidetrack #1)	MWD+IFR1+MS	Fixed:v2:crustal dec & 3-axis correction	

Summary								
		Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)		Distance Between Ellipses (usft)	Separation Factor	Warning
Site Name	Offset Well - Wellbore - Design							
Sec 8-T10N-R57W								
	Horsetail #08C-1708 - Original Hole - Original Hole	8,060.00	8,060.00	0.00	0.00	10,000.000	CC	
	Horsetail #08C-1708 - Original Hole - Original Hole	8,070.65	8,070.65	0.05	-0.11	0.293	Level 1, SF	
	Horsetail #08C-1708 - Original Hole - Original Hole	13,282.25	13,283.00	34.55	-54.99	0.386	Level 1, ES	

Offset Design	Sec 8-T10N-R57W - Horsetail #08C-1708 - Original Hole - Original Hole											Offset Site Error:	0.00 usft
Survey Program:	130-MWD+IFR1+MS											Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
8,060.00	5,823.49	8,060.00	5,823.49	0.00	0.00	0.00	-2,170.80	298.30	0.00	0.00	0.00	N/A	CC
8,070.65	5,823.37	8,070.65	5,823.33	0.06	0.11	28.09	-2,181.45	298.26	0.05	-0.11	0.16	0.293	Level 1, SF
8,160.00	5,823.61	8,159.92	5,820.79	0.53	1.13	25.34	-2,270.68	297.73	3.13	1.34	1.79	1.751	
8,260.00	5,824.25	8,259.84	5,817.44	0.90	2.23	31.71	-2,370.54	296.98	8.01	5.51	2.50	3.201	
8,360.00	5,821.69	8,359.80	5,815.38	1.33	3.23	53.32	-2,470.47	295.73	10.59	6.51	4.09	2.591	
8,460.00	5,817.59	8,459.57	5,812.53	1.82	4.30	68.64	-2,570.19	294.69	13.99	8.12	5.87	2.383	
8,560.00	5,813.49	8,559.80	5,809.34	2.35	5.38	76.12	-2,670.36	294.33	17.38	9.76	7.62	2.282	
8,660.00	5,809.39	8,660.13	5,809.09	2.93	6.41	89.08	-2,770.67	295.77	18.94	9.61	9.33	2.030	
8,760.00	5,805.29	8,760.05	5,810.01	3.55	7.54	103.21	-2,870.57	298.12	20.62	9.60	11.02	1.871	
8,860.00	5,801.19	8,860.09	5,810.60	4.21	8.75	114.32	-2,970.56	300.90	22.81	10.21	12.60	1.811	
8,960.00	5,797.59	8,959.97	5,810.91	4.85	9.93	123.56	-3,070.38	304.39	24.10	10.14	13.97	1.726	
9,060.00	5,795.75	9,059.56	5,810.16	5.51	11.08	126.02	-3,169.96	304.96	24.52	9.00	15.52	1.580	
9,135.52	5,794.63	9,135.13	5,808.20	6.07	11.95	123.79	-3,245.50	304.38	24.40	7.41	16.99	1.436	Level 3
9,160.00	5,794.26	9,159.44	5,807.54	6.25	12.23	122.83	-3,269.80	304.04	24.48	7.01	17.48	1.401	Level 3
9,260.00	5,792.78	9,258.97	5,805.84	7.03	13.37	119.62	-3,369.28	301.49	26.41	6.94	19.47	1.357	Level 3
9,360.00	5,791.30	9,359.09	5,803.97	7.84	14.52	115.93	-3,469.33	298.20	28.98	7.40	21.58	1.343	Level 3
9,460.00	5,789.81	9,459.00	5,801.87	8.68	15.69	113.03	-3,569.19	295.74	30.81	7.12	23.70	1.300	Level 3
9,560.00	5,788.33	9,559.04	5,801.05	9.55	16.86	112.39	-3,669.19	293.06	33.38	7.66	25.72	1.298	Level 3
9,660.00	5,786.85	9,658.88	5,799.98	10.44	18.03	111.73	-3,768.99	290.81	35.47	7.70	27.77	1.277	Level 3
9,760.00	5,785.36	9,758.82	5,800.32	11.36	19.20	113.03	-3,868.91	288.42	38.21	8.51	29.70	1.287	Level 3
9,860.00	5,783.88	9,858.85	5,799.67	12.30	20.41	112.81	-3,968.90	285.87	40.72	8.92	31.80	1.281	Level 3
9,960.00	5,782.40	9,958.32	5,799.37	13.26	21.57	112.85	-4,068.32	283.00	43.67	9.84	33.84	1.291	Level 3
10,060.00	5,780.91	10,058.33	5,800.18	14.24	22.74	114.02	-4,168.28	279.85	47.32	11.50	35.82	1.321	Level 3

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

Precision Drilling Corporation

Anticollision Report

Company:	WHITING PETROLEUM CORP.	Local Co-ordinate Reference:	Well Horsetail #08C-1708
Project:	Weld County, CO	TVD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Reference Site:	Sec 8-T10N-R57W	MD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Horsetail #08C-1708	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.79 sigma
Reference Wellbore	Sidetrack #1	Database:	Local2
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 130-MWD+IFR1+MS												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,160.00	5,779.43	10,160.06	5,799.90	15.24	23.99	114.67	-4,269.99	278.29	49.06	11.08	37.98	1.292	Level 3
10,260.00	5,777.95	10,260.68	5,798.01	16.26	25.26	114.57	-4,370.59	278.77	48.30	8.10	40.20	1.201	Level 2
10,360.00	5,776.46	10,361.14	5,793.77	17.30	26.54	112.01	-4,470.95	279.67	46.23	3.52	42.71	1.082	Level 2
10,460.00	5,774.98	10,460.77	5,791.21	18.35	27.73	111.45	-4,570.54	280.98	44.44	-0.51	44.96	0.989	Level 1
10,560.00	5,773.50	10,561.16	5,789.32	19.41	28.94	111.97	-4,670.89	282.88	42.37	-4.74	47.11	0.899	Level 1
10,660.00	5,772.01	10,661.25	5,789.08	20.49	30.12	115.56	-4,770.92	286.28	39.61	-9.23	48.84	0.811	Level 1
10,760.00	5,770.53	10,761.31	5,789.65	21.58	31.30	121.13	-4,870.90	290.12	37.04	-13.09	50.13	0.739	Level 1
10,860.00	5,769.04	10,861.49	5,789.34	22.69	32.55	126.95	-4,970.99	294.63	33.82	-17.40	51.21	0.660	Level 1
10,960.00	5,767.56	10,961.50	5,788.47	23.80	33.80	133.20	-5,070.89	299.18	30.59	-21.40	51.98	0.588	Level 1
11,060.00	5,766.08	11,061.27	5,787.32	24.93	35.03	140.41	-5,170.55	303.72	27.59	-24.71	52.30	0.528	Level 1
11,160.00	5,764.59	11,161.48	5,785.44	26.06	36.28	146.46	-5,270.68	307.29	25.04	-27.72	52.76	0.475	Level 1
11,260.00	5,763.11	11,261.12	5,782.98	27.21	37.52	152.61	-5,370.22	310.65	22.39	-30.78	53.17	0.421	Level 1
11,311.98	5,762.34	11,312.74	5,782.15	27.81	38.13	154.59	-5,421.83	311.45	21.93	-31.74	53.67	0.409	Level 1
11,360.00	5,761.63	11,360.41	5,782.03	28.36	38.69	156.09	-5,469.50	311.73	22.32	-31.89	54.21	0.412	Level 1
11,460.00	5,760.14	11,460.63	5,781.79	29.53	39.93	158.49	-5,569.71	312.07	23.27	-32.33	55.59	0.419	Level 1
11,560.00	5,758.66	11,560.11	5,782.12	30.70	41.16	158.83	-5,669.19	311.34	25.16	-32.26	57.41	0.438	Level 1
11,660.00	5,757.18	11,660.17	5,782.59	31.88	42.36	156.05	-5,769.22	308.96	27.81	-32.27	60.08	0.463	Level 1
11,760.00	5,755.69	11,760.49	5,782.01	33.07	43.61	152.25	-5,869.50	306.23	29.74	-33.44	63.18	0.471	Level 1
11,860.00	5,754.21	11,860.53	5,780.40	34.26	44.86	148.77	-5,969.50	304.02	30.63	-35.66	66.29	0.462	Level 1
11,960.00	5,752.73	11,960.31	5,780.38	35.46	46.03	148.65	-6,069.28	302.88	32.38	-35.97	68.35	0.474	Level 1
12,060.00	5,751.24	12,060.52	5,780.59	36.67	47.24	149.58	-6,169.49	302.33	34.03	-36.08	70.10	0.485	Level 1
12,160.00	5,749.76	12,160.98	5,779.67	37.88	48.52	149.81	-6,269.94	301.98	34.61	-37.51	72.11	0.480	Level 1
12,260.00	5,748.28	12,261.46	5,777.33	39.10	49.83	149.41	-6,370.39	302.02	33.76	-40.58	74.34	0.454	Level 1
12,360.00	5,746.79	12,360.96	5,775.39	40.32	51.06	150.73	-6,469.86	303.00	32.79	-43.14	75.93	0.432	Level 1
12,360.63	5,746.78	12,361.58	5,775.39	40.33	51.06	150.75	-6,470.48	303.01	32.79	-43.15	75.93	0.432	Level 1
12,460.00	5,745.31	12,460.75	5,775.27	41.55	52.20	154.67	-6,569.64	304.67	33.15	-43.42	76.57	0.433	Level 1
12,560.00	5,743.83	12,560.87	5,775.66	42.78	53.38	160.10	-6,669.73	307.15	33.86	-42.97	76.83	0.441	Level 1
12,660.00	5,742.34	12,661.84	5,773.82	44.02	54.63	163.91	-6,770.64	309.42	32.79	-44.96	77.74	0.422	Level 1
12,760.00	5,740.86	12,761.89	5,769.58	45.26	55.86	163.95	-6,870.61	310.06	29.91	-49.80	79.71	0.375	Level 1
12,846.42	5,739.58	12,847.54	5,767.15	46.34	56.87	164.39	-6,956.21	310.47	28.63	-52.67	81.30	0.352	Level 1
12,860.00	5,739.38	12,860.95	5,767.03	46.51	57.02	164.67	-6,969.62	310.57	28.67	-52.82	81.49	0.352	Level 1
12,960.00	5,737.89	12,960.26	5,768.31	47.76	58.21	168.33	-7,068.92	311.70	31.06	-51.47	82.53	0.376	Level 1
13,060.00	5,736.41	13,060.34	5,769.86	49.01	59.45	171.66	-7,168.97	312.90	33.81	-50.05	83.86	0.403	Level 1
13,160.00	5,735.04	13,160.72	5,770.44	50.23	60.69	169.91	-7,269.34	311.30	35.96	-50.21	86.17	0.417	Level 1
13,260.00	5,734.99	13,261.45	5,769.07	51.42	61.95	166.67	-7,370.03	308.94	35.04	-53.86	88.90	0.394	Level 1
13,282.25	5,734.99	13,283.00	5,768.48	51.70	62.23	165.84	-7,391.56	308.44	34.55	-54.99	89.54	0.386	Level 1, ES
13,360.00	5,734.99	13,283.00	5,768.48	52.69	62.23	165.84	-7,391.56	308.44	85.08	48.59	36.49	2.332	
13,460.00	5,734.99	13,283.00	5,768.48	53.95	62.23	165.84	-7,391.56	308.44	181.08	161.90	19.18	9.443	
13,560.00	5,734.99	13,283.00	5,768.48	55.22	62.23	165.84	-7,391.56	308.44	279.89	265.10	14.79	18.928	
13,660.00	5,734.99	13,283.00	5,768.48	56.49	62.23	165.84	-7,391.56	308.44	379.33	366.15	13.18	28.774	
13,760.00	5,734.99	13,283.00	5,768.48	57.77	62.23	165.84	-7,391.56	308.44	479.00	466.49	12.51	38.293	
13,860.00	5,734.99	13,283.00	5,768.48	59.05	62.23	165.84	-7,391.56	308.44	578.78	566.56	12.22	47.357	
13,960.00	5,734.99	13,283.00	5,768.48	60.33	62.23	165.84	-7,391.56	308.44	678.63	666.51	12.12	55.994	
14,060.00	5,734.99	13,283.00	5,768.48	61.61	62.23	165.84	-7,391.56	308.44	778.52	766.40	12.11	64.262	
14,160.00	5,734.99	13,283.00	5,768.48	62.90	62.23	165.84	-7,391.56	308.44	878.43	866.27	12.16	72.211	
14,260.00	5,734.99	13,283.00	5,768.48	64.18	62.23	165.84	-7,391.56	308.44	978.36	966.11	12.25	79.880	

Precision Drilling Corporation

Anticollision Report

Company:	WHITING PETROLEUM CORP.	Local Co-ordinate Reference:	Well Horsetail #08C-1708
Project:	Weld County, CO	TVD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Reference Site:	Sec 8-T10N-R57W	MD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Horsetail #08C-1708	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.79 sigma
Reference Wellbore	Sidetrack #1	Database:	Local2
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

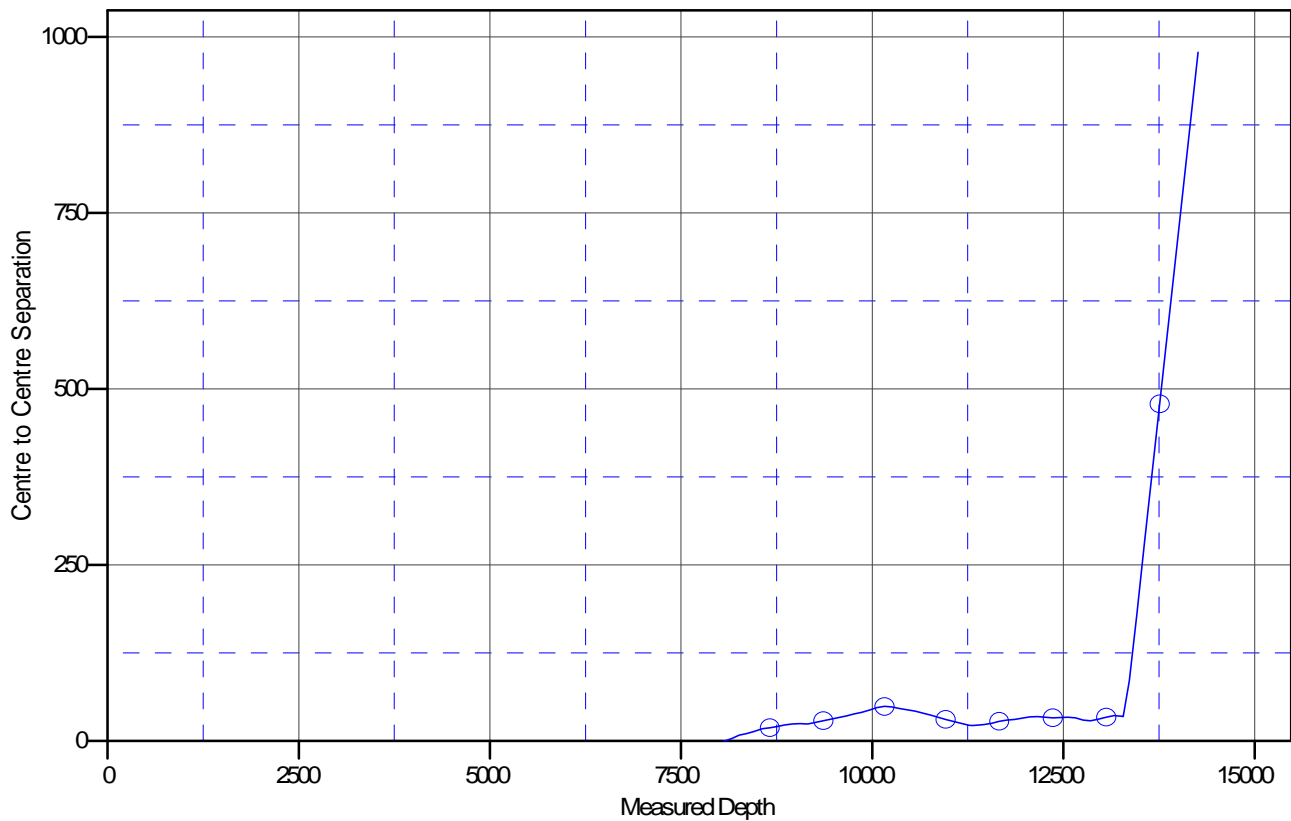
Reference Depths are relative to 4912.5'GL+21'KB @ 4933.50usft (Uni Coordinates are relative to: Horsetail #08C-1708)

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 1.11°

Ladder Plot



LEGEND

Horsetail #08C-1708, Original Hole, Original Hole V0

Precision Drilling Corporation

Anticollision Report

Company:	WHITING PETROLEUM CORP.	Local Co-ordinate Reference:	Well Horsetail #08C-1708
Project:	Weld County, CO	TVD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Reference Site:	Sec 8-T10N-R57W	MD Reference:	4912.5'GL+21'KB @ 4933.50usft (Unit 409)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Horsetail #08C-1708	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.79 sigma
Reference Wellbore	Sidetrack #1	Database:	Local2
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 4912.5'GL+21'KB @ 4933.50usft (Unit Coordinates are relative to: Horsetail #08C-1708)

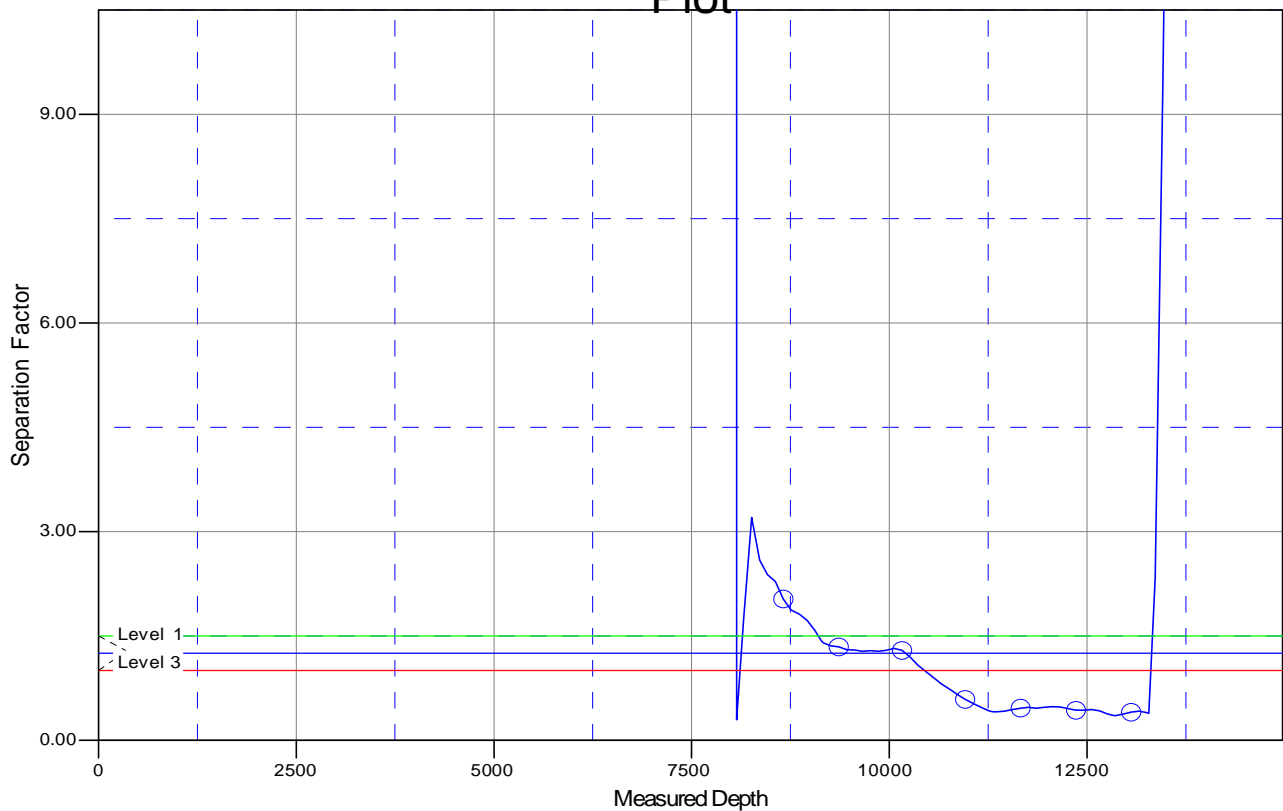
Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, Colorado Northern Zone

Central Meridian is 105° 30' 0.000 W

Grid Convergence at Surface is: 1.11°

Separation Factor Plot



LEGEND

Horsetail #08C-1708, Original Hole, Original Hole V0