



# **Whiting Petroleum Corp.**

**Weld County, CO  
Sec 30-T10N-R57W  
Horsetail #30E-3103**

**Hz  
APD**

## **Anticollision Report**

**22 October, 2015**



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	APD		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.00usft	<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 1,550.00 usft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	3.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	10/22/2015		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	13,649.65	APD (Hz)	MWD+IFR1+MS+sag	Fixed:v2:crustal dec & 3-axis correction + sag

Site Name	Reference		Distance		Separation Factor	Warning
	Measured Depth (usft)	Offset Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
Sec 30-T10N-R57W						
Horsetail #30E-1901 - Hz - APD	300.00	300.00	129.80	128.19	80.376	CC, ES
Horsetail #30E-1901 - Hz - APD	6,000.00	5,600.00	799.58	760.37	20.393	SF
Horsetail #30E-1902 - Hz - APD	200.00	200.00	77.24	76.30	82.109	CC
Horsetail #30E-1902 - Hz - APD	400.00	401.05	77.34	75.08	34.330	ES
Horsetail #30E-1902 - Hz - APD	6,000.00	5,628.16	580.54	541.05	14.701	SF
Horsetail #30E-1903 - Hz - APD	730.38	732.39	21.47	17.00	4.802	CC, ES, SF
Horsetail #30E-1904 - Hz - APD	795.36	793.07	49.42	44.48	10.004	CC
Horsetail #30E-1904 - Hz - APD	5,907.94	5,713.59	65.16	25.94	1.662	ES, SF
Horsetail #30E-1934 - Hz - APD	300.00	300.00	102.06	100.44	63.194	CC, ES
Horsetail #30E-1934 - Hz - APD	6,100.00	5,606.57	684.51	643.71	16.779	SF
Horsetail #30E-1935 - Hz - APD	599.99	602.54	52.41	48.84	14.677	CC, ES
Horsetail #30E-1935 - Hz - APD	6,109.52	5,610.64	429.92	388.76	10.444	SF
Horsetail #30E-1936 - Hz - APD	785.74	786.07	13.53	8.66	2.781	CC, ES
Horsetail #30E-1936 - Hz - APD	6,057.58	5,632.22	99.35	58.73	2.446	SF
Horsetail #30E-3104 - Hz - APD	300.00	300.00	59.98	58.36	37.140	CC
Horsetail #30E-3104 - Hz - APD	500.00	496.00	60.25	57.19	19.690	ES
Horsetail #30E-3104 - Hz - APD	13,650.59	13,742.83	336.93	97.58	1.408	Level 3, SF
Horsetail #30E-3135 - Hz - APD	300.00	300.00	29.99	28.37	18.570	CC
Horsetail #30E-3135 - Hz - APD	400.00	400.81	30.23	27.92	13.080	ES
Horsetail #30E-3135 - Hz - APD	13,650.59	13,925.21	326.53	180.42	2.235	SF
Horsetail #30E-3136 - Hz - APD	300.00	300.00	29.99	28.37	18.570	CC
Horsetail #30E-3136 - Hz - APD	500.00	498.01	30.21	27.15	9.858	ES
Horsetail #30E-3136 - Hz - APD	13,650.59	13,855.60	257.22	87.81	1.518	SF
Horsetail #30E-3138 - Hz - APD	300.00	300.00	119.96	118.34	74.279	CC
Horsetail #30E-3138 - Hz - APD	500.00	492.01	120.21	117.17	39.479	ES
Horsetail #30E-3138 - Hz - APD	13,650.59	13,949.06	835.85	598.33	3.519	SF

<b>Offset Design</b>	Sec 30-T10N-R57W - Horsetail #30E-1901 - Hz - APD										<b>Offset Site Error:</b>	0.00 usft	
<b>Survey Program:</b>	0-MWD+IFR1+MS+sag										<b>Offset Well Error:</b>	0.00 usft	
<b>Reference</b>	<b>Offset</b>	<b>Semi Major Axis</b>				<b>Distance</b>						<b>Warning</b>	
<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Measured Depth (usft)</b>	<b>Vertical Depth (usft)</b>	<b>Reference (usft)</b>	<b>Offset (usft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Between Centres (usft)</b>	<b>Between Ellipses (usft)</b>	<b>Minimum Separation (usft)</b>	<b>Separation Factor</b>	
0.00	0.00	0.00	0.00	0.00	0.00	-67.54	49.59	-119.96	129.80				
100.00	100.00	100.00	100.00	0.13	0.13	-67.54	49.59	-119.96	129.80	129.54	0.27	487.344	

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
200.00	200.00	200.00	200.00	0.47	0.47	-67.54	49.59	-119.96	129.80	128.86	0.94	137.994		
300.00	300.00	300.00	300.00	0.81	0.81	-67.54	49.59	-119.96	129.80	128.19	1.61	80.376	CC, ES	
400.00	399.98	399.69	399.67	1.14	1.11	-135.39	48.02	-120.69	131.13	128.89	2.24	58.505		
500.00	499.84	498.75	498.59	1.47	1.41	-139.05	43.35	-122.87	135.50	132.63	2.86	47.312		
600.00	599.52	596.70	596.17	1.81	1.73	-144.42	35.68	-126.45	143.27	139.74	3.53	40.583		
700.00	699.20	693.53	692.29	2.15	2.05	-150.39	25.14	-131.37	153.42	149.20	4.23	36.304		
800.00	798.87	789.06	786.69	2.49	2.39	-156.53	11.85	-137.57	166.48	161.52	4.96	33.566		
900.00	898.55	883.12	879.10	2.84	2.77	-162.54	-4.00	-144.97	182.93	177.21	5.72	31.975		
1,000.00	998.22	978.95	972.87	3.19	3.17	-168.10	-21.92	-153.33	202.37	195.92	6.44	31.408		
1,100.00	1,097.89	1,075.23	1,067.07	3.53	3.58	-172.71	-39.95	-161.74	223.40	216.27	7.14	31.292		
1,200.00	1,197.57	1,171.50	1,161.26	3.88	4.01	-176.53	-57.98	-170.16	245.62	237.81	7.82	31.422		
1,300.00	1,297.24	1,267.77	1,255.46	4.24	4.43	-179.72	-76.01	-178.57	268.73	260.23	8.49	31.647		
1,400.00	1,396.91	1,364.05	1,349.65	4.59	4.86	177.59	-94.04	-186.98	292.51	283.35	9.16	31.940		
1,500.00	1,496.59	1,460.32	1,443.85	4.94	5.29	175.31	-112.07	-195.40	316.81	306.99	9.82	32.259		
1,600.00	1,596.26	1,556.60	1,538.05	5.29	5.73	173.35	-130.09	-203.81	341.53	331.04	10.48	32.583		
1,700.00	1,695.93	1,652.87	1,632.24	5.64	6.16	171.65	-148.12	-212.22	366.57	355.43	11.14	32.900		
1,800.00	1,795.61	1,749.14	1,726.44	5.99	6.60	170.17	-166.15	-220.64	391.88	380.08	11.80	33.205		
1,900.00	1,895.28	1,845.42	1,820.63	6.34	7.04	168.86	-184.18	-229.05	417.41	404.95	12.46	33.494		
2,000.00	1,994.96	1,941.69	1,914.83	6.70	7.48	167.71	-202.21	-237.47	443.12	429.99	13.12	33.765		
2,100.00	2,094.63	2,037.96	2,009.02	7.05	7.92	166.69	-220.24	-245.88	468.98	455.19	13.79	34.020		
2,200.00	2,194.30	2,134.24	2,103.22	7.40	8.36	165.76	-238.27	-254.29	494.96	480.51	14.45	34.259		
2,300.00	2,293.98	2,230.51	2,197.41	7.75	8.80	164.94	-256.30	-262.71	521.05	505.94	15.11	34.482		
2,400.00	2,393.65	2,326.79	2,291.61	8.11	9.24	164.19	-274.33	-271.12	547.24	531.46	15.78	34.690		
2,500.00	2,493.32	2,423.06	2,385.81	8.46	9.68	163.51	-292.35	-279.53	573.50	557.06	16.44	34.884		
2,600.00	2,593.00	2,519.33	2,480.00	8.81	10.13	162.88	-310.38	-287.95	599.84	582.73	17.11	35.066		
2,700.00	2,692.67	2,615.61	2,574.20	9.16	10.57	162.31	-328.41	-296.36	626.23	608.46	17.77	35.236		
2,800.00	2,792.34	2,711.88	2,668.39	9.52	11.01	161.79	-346.44	-304.77	652.68	634.24	18.44	35.396		
2,900.00	2,892.02	2,808.15	2,762.59	9.87	11.46	161.31	-364.47	-313.19	679.18	660.07	19.11	35.546		
3,000.00	2,991.69	2,904.43	2,856.78	10.22	11.90	160.86	-382.50	-321.60	705.71	685.94	19.78	35.686		
3,100.00	3,091.37	3,000.70	2,950.98	10.57	12.34	160.44	-400.53	-330.01	732.29	711.84	20.44	35.818		
3,200.00	3,191.04	3,096.97	3,045.17	10.93	12.79	160.06	-418.56	-338.43	758.89	737.78	21.11	35.942		
3,300.00	3,290.71	3,193.25	3,139.37	11.28	13.23	159.70	-436.59	-346.84	785.53	763.75	21.78	36.060		
3,400.00	3,390.39	3,289.52	3,233.57	11.63	13.67	159.36	-454.61	-355.26	812.19	789.74	22.45	36.170		
3,500.00	3,490.06	3,385.80	3,327.76	11.98	14.12	159.05	-472.64	-363.67	838.88	815.76	23.13	36.275		
3,600.00	3,589.73	3,482.07	3,421.96	12.34	14.56	158.75	-490.67	-372.08	865.59	841.79	23.80	36.374		
3,700.00	3,689.41	3,578.34	3,516.15	12.69	15.01	158.48	-508.70	-380.50	892.32	867.85	24.47	36.468		
3,800.00	3,789.08	3,674.62	3,610.35	13.04	15.45	158.21	-526.73	-388.91	919.07	893.93	25.14	36.557		
3,900.00	3,888.76	3,770.89	3,704.54	13.39	15.90	157.97	-544.76	-397.32	945.84	920.02	25.81	36.641		
4,000.00	3,988.43	3,867.16	3,798.74	13.75	16.34	157.73	-562.79	-405.74	972.62	946.13	26.49	36.722		
4,100.00	4,088.10	3,963.44	3,892.93	14.10	16.78	157.51	-580.82	-414.15	999.41	972.25	27.16	36.798		
4,200.00	4,187.78	4,059.71	3,987.13	14.45	17.23	157.30	-598.85	-422.56	1,026.22	998.39	27.83	36.871		
4,300.00	4,287.45	4,155.99	4,081.32	14.81	17.67	157.11	-616.87	-430.98	1,053.04	1,024.53	28.51	36.940		
4,400.00	4,387.12	4,252.26	4,175.52	15.16	18.12	156.92	-634.90	-439.39	1,079.87	1,050.69	29.18	37.006		
4,500.00	4,486.80	4,374.99	4,295.78	15.51	18.62	156.71	-652.98	-449.74	1,106.16	1,076.16	30.01	36.865		
4,599.99	4,586.46	4,529.85	4,448.75	15.86	19.05	156.57	-678.87	-459.91	1,128.21	1,097.31	30.90	36.510		
4,700.00	4,686.27	4,688.37	4,606.44	16.17	19.44	156.64	-693.39	-466.68	1,143.57	1,111.89	31.67	36.104		
4,800.00	4,786.22	6,221.79	5,538.00	16.42	20.47	-157.73	124.76	-483.52	1,099.21	1,072.41	26.80	41.019		
4,900.00	4,886.22	6,221.85	5,538.00	16.70	20.47	-90.94	124.82	-483.52	1,033.51	1,004.92	28.59	36.149		
5,000.00	4,986.22	6,221.85	5,538.00	17.01	20.47	-90.94	124.82	-483.52	973.54	943.07	30.48	31.943		
5,100.00	5,086.02	6,217.26	5,538.00	17.29	20.45	93.34	120.23	-483.44	920.60	888.24	32.35	28.453		
5,200.00	5,183.26	6,194.62	5,538.00	17.55	20.38	97.16	97.59	-483.07	876.61	842.58	34.03	25.761		
5,300.00	5,274.40	6,153.84	5,538.00	17.81	20.29	98.44	56.82	-482.40	843.22	807.82	35.40	23.822		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,400.00	5,356.08	6,096.43	5,538.00	18.06	20.17	97.72	-0.59	-481.46	820.44	784.07	36.37	22.557		
5,500.00	5,425.31	6,024.49	5,538.00	18.31	20.11	95.73	-72.52	-480.28	806.74	769.71	37.04	21.782		
5,600.00	5,479.55	5,940.67	5,538.00	18.57	20.09	93.29	-156.33	-478.90	799.60	762.11	37.49	21.328		
5,700.00	5,516.79	5,845.55	5,533.04	18.87	20.15	90.81	-251.20	-477.34	796.10	758.21	37.89	21.010		
5,800.00	5,535.68	5,754.77	5,512.79	19.24	20.24	88.32	-339.57	-475.89	794.69	756.37	38.32	20.736		
5,819.37	5,537.33	5,737.94	5,507.36	19.32	20.26	87.83	-355.49	-475.63	794.65	756.23	38.41	20.686		
5,900.00	5,538.00	5,670.45	5,480.51	19.68	20.35	85.85	-417.35	-474.61	795.31	756.54	38.77	20.514		
6,000.00	5,538.00	5,600.00	5,444.21	20.21	20.44	83.25	-477.66	-473.62	799.58	760.37	39.21	20.393 SF		
6,100.00	5,538.00	5,536.55	5,404.81	20.84	20.51	80.45	-527.34	-472.80	809.42	769.86	39.57	20.458		
6,200.00	5,538.00	5,486.13	5,369.39	21.55	20.56	77.96	-563.18	-472.22	826.26	786.43	39.83	20.742		
6,300.00	5,538.00	5,450.00	5,341.95	22.34	20.59	76.07	-586.67	-471.83	850.92	810.87	40.05	21.247		
6,400.00	5,538.00	5,400.00	5,301.43	23.19	20.61	73.33	-615.93	-471.35	883.64	843.60	40.03	22.073		
6,500.00	5,538.00	5,380.95	5,285.28	24.11	20.62	72.25	-626.04	-471.18	923.95	883.81	40.14	23.018		
6,600.00	5,538.00	5,350.00	5,258.29	25.08	20.62	70.49	-641.17	-470.93	971.64	931.57	40.07	24.249		
6,700.00	5,538.00	5,335.72	5,245.55	26.10	20.62	69.67	-647.61	-470.83	1,025.74	985.67	40.07	25.597		
6,800.00	5,538.00	5,317.84	5,229.35	27.16	20.62	68.64	-655.18	-470.70	1,085.64	1,045.64	40.00	27.140		
6,900.00	5,538.00	5,300.00	5,212.93	28.25	20.62	67.61	-662.17	-470.59	1,150.53	1,110.63	39.90	28.835		
7,000.00	5,538.00	5,300.00	5,212.93	29.38	20.62	67.61	-662.17	-470.59	1,219.86	1,179.94	39.92	30.557		
7,100.00	5,538.00	5,276.89	5,191.33	30.54	20.61	66.28	-670.38	-470.45	1,292.59	1,252.85	39.75	32.522		
7,200.00	5,538.00	5,250.00	5,165.77	31.73	20.59	64.74	-678.72	-470.32	1,368.93	1,329.40	39.54	34.623		
7,300.00	5,538.00	5,250.00	5,165.77	32.93	20.59	64.74	-678.72	-470.32	1,447.41	1,407.87	39.54	36.607		
7,400.00	5,538.00	5,250.00	5,165.77	34.16	20.59	64.74	-678.72	-470.32	1,528.41	1,488.88	39.53	38.662		



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	-50.05	49.59	-59.21	77.24					
100.00	100.00	100.00	100.00	0.13	0.13	-50.05	49.59	-59.21	77.24	76.97	0.27	289.981		
200.00	200.00	200.00	200.00	0.47	0.47	-50.05	49.59	-59.21	77.24	76.30	0.94	82.109 CC		
300.00	300.00	300.00	300.00	0.81	0.81	-50.05	49.59	-59.21	77.24	75.62	1.61	47.826		
300.03	300.03	300.03	300.03	0.81	0.81	-50.05	49.59	-59.21	77.24	75.62	1.62	47.820		
400.00	399.98	401.05	401.03	1.14	1.11	-118.98	47.87	-59.67	77.34	75.08	2.25	34.330 ES		
500.00	499.84	501.50	501.34	1.47	1.42	-125.91	42.75	-61.03	78.41	75.54	2.87	27.297		
600.00	599.52	600.89	600.33	1.81	1.74	-136.23	34.34	-63.27	82.01	78.50	3.51	23.345		
700.00	699.20	699.18	697.89	2.15	2.06	-147.58	22.76	-66.35	88.48	84.29	4.19	21.119		
800.00	798.87	796.20	793.72	2.49	2.41	-158.84	8.17	-70.24	98.93	94.00	4.93	20.072		
900.00	898.55	892.63	888.49	2.84	2.80	-168.98	-9.05	-74.83	113.84	108.15	5.70	19.987		
1,000.00	998.22	989.56	983.68	3.19	3.19	-176.86	-26.75	-79.54	131.78	125.35	6.43	20.507		
1,100.00	1,097.89	1,086.49	1,078.86	3.53	3.60	177.19	-44.45	-84.25	151.60	144.47	7.13	21.268		
1,200.00	1,197.57	1,183.43	1,174.05	3.88	4.01	172.62	-62.15	-88.97	172.64	164.83	7.81	22.111		
1,300.00	1,297.24	1,280.36	1,269.23	4.24	4.43	169.05	-79.84	-93.68	194.52	186.03	8.48	22.932		
1,400.00	1,396.91	1,377.29	1,364.42	4.59	4.85	166.21	-97.54	-98.39	216.97	207.82	9.15	23.715		
1,500.00	1,496.59	1,474.22	1,459.60	4.94	5.27	163.89	-115.24	-103.11	239.84	230.03	9.81	24.439		
1,600.00	1,596.26	1,571.15	1,554.79	5.29	5.69	161.98	-132.94	-107.82	263.03	252.55	10.48	25.103		
1,700.00	1,695.93	1,668.08	1,649.97	5.64	6.11	160.38	-150.64	-112.54	286.44	275.30	11.14	25.709		
1,800.00	1,795.61	1,765.02	1,745.16	5.99	6.54	159.02	-168.34	-117.25	310.04	298.23	11.81	26.260		
1,900.00	1,895.28	1,861.95	1,840.34	6.34	6.96	157.85	-186.04	-121.96	333.78	321.30	12.47	26.761		
2,000.00	1,994.96	1,958.88	1,935.53	6.70	7.39	156.84	-203.74	-126.68	357.63	344.49	13.14	27.219		
2,100.00	2,094.63	2,055.81	2,030.72	7.05	7.82	155.95	-221.44	-131.39	381.57	367.77	13.81	27.636		
2,200.00	2,194.30	2,152.74	2,125.90	7.40	8.24	155.17	-239.14	-136.10	405.59	391.12	14.48	28.019		
2,300.00	2,293.98	2,249.67	2,221.09	7.75	8.67	154.48	-256.84	-140.82	429.68	414.53	15.15	28.370		
2,400.00	2,393.65	2,346.61	2,316.27	8.11	9.10	153.86	-274.54	-145.53	453.82	438.00	15.82	28.692		
2,500.00	2,493.32	2,443.54	2,411.46	8.46	9.53	153.30	-292.24	-150.24	478.00	461.51	16.49	28.990		
2,600.00	2,593.00	2,540.47	2,506.64	8.81	9.96	152.79	-309.94	-154.96	502.22	485.06	17.16	29.266		
2,700.00	2,692.67	2,637.40	2,601.83	9.16	10.39	152.33	-327.64	-159.67	526.47	508.64	17.83	29.521		
2,800.00	2,792.34	2,734.33	2,697.01	9.52	10.82	151.92	-345.34	-164.39	550.76	532.25	18.51	29.758		
2,900.00	2,892.02	2,831.26	2,792.20	9.87	11.25	151.53	-363.04	-169.10	575.07	555.89	19.18	29.979		
3,000.00	2,991.69	2,928.20	2,887.38	10.22	11.68	151.18	-380.74	-173.81	599.40	579.54	19.86	30.185		
3,100.00	3,091.37	3,025.13	2,982.57	10.57	12.11	150.86	-398.44	-178.53	623.75	603.22	20.53	30.377		
3,200.00	3,191.04	3,122.06	3,077.75	10.93	12.54	150.56	-416.14	-183.24	648.12	626.91	21.21	30.558		
3,300.00	3,290.71	3,218.99	3,172.94	11.28	12.97	150.28	-433.84	-187.95	672.50	650.62	21.89	30.727		
3,400.00	3,390.39	3,315.92	3,268.12	11.63	13.40	150.02	-451.54	-192.67	696.90	674.34	22.56	30.886		
3,500.00	3,490.06	3,412.85	3,363.31	11.98	13.83	149.78	-469.24	-197.38	721.31	698.07	23.24	31.036		
3,600.00	3,589.73	3,509.79	3,458.50	12.34	14.26	149.55	-486.94	-202.10	745.73	721.81	23.92	31.178		
3,700.00	3,689.41	3,606.72	3,553.68	12.69	14.69	149.34	-504.64	-206.81	770.16	745.57	24.60	31.311		
3,800.00	3,789.08	3,703.65	3,648.87	13.04	15.12	149.14	-522.34	-211.52	794.61	769.33	25.28	31.437		
3,900.00	3,888.76	3,800.58	3,744.05	13.39	15.55	148.96	-540.03	-216.24	819.05	793.10	25.95	31.557		
4,000.00	3,988.43	3,897.51	3,839.24	13.75	15.98	148.78	-557.73	-220.95	843.51	816.88	26.63	31.671		
4,100.00	4,088.10	3,994.44	3,934.42	14.10	16.42	148.62	-575.43	-225.66	867.98	840.66	27.31	31.778		
4,200.00	4,187.78	4,091.38	4,029.61	14.45	16.85	148.46	-593.13	-230.38	892.45	864.45	27.99	31.881		
4,300.00	4,287.45	4,188.31	4,124.79	14.81	17.28	148.31	-610.83	-235.09	916.92	888.25	28.67	31.979		
4,400.00	4,387.12	4,285.24	4,219.98	15.16	17.71	148.17	-628.53	-239.80	941.40	912.05	29.35	32.072		
4,500.00	4,486.80	4,382.17	4,315.16	15.51	18.14	148.04	-646.23	-244.52	965.89	935.86	30.03	32.160		
4,599.99	4,586.46	4,511.80	4,442.77	15.86	18.61	147.91	-668.22	-250.37	989.26	958.37	30.89	32.025		
4,700.00	4,686.27	4,658.31	4,588.04	16.17	18.99	148.01	-686.49	-255.24	1,006.71	975.04	31.67	31.785		
4,800.00	4,786.22	4,758.36	4,700.00	16.42	20.71	-157.03	136.76	-260.91	1,003.75	981.27	22.48	44.646		
4,900.00	4,886.22	4,858.42	4,800.00	16.70	20.71	-90.12	136.83	-260.91	923.98	899.69	24.29	38.043		
5,000.00	4,986.22	4,956.42	4,900.00	17.01	20.71	-90.12	136.83	-260.91	848.40	822.06	26.34	32.208		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,100.00	5,086.02	6,286.83	5,606.00	17.29	20.69	96.67	132.23	-260.90	778.48	749.88	28.60	27.218		
5,200.00	5,183.26	6,264.18	5,606.00	17.55	20.62	103.00	109.58	-260.86	717.15	686.25	30.90	23.212		
5,300.00	5,274.40	6,223.40	5,606.00	17.81	20.48	105.70	68.80	-260.77	667.43	634.40	33.03	20.206		
5,400.00	5,356.08	6,165.98	5,606.00	18.06	20.33	105.61	11.38	-260.66	630.73	595.91	34.83	18.110		
5,500.00	5,425.31	6,094.03	5,606.00	18.31	20.17	103.68	-60.57	-260.51	606.50	570.34	36.16	16.771		
5,600.00	5,479.55	6,010.20	5,606.00	18.57	20.08	100.93	-144.40	-260.34	592.44	555.34	37.10	15.969		
5,700.00	5,516.79	5,906.24	5,601.58	18.87	20.05	97.66	-248.16	-260.13	584.89	547.08	37.80	15.471		
5,800.00	5,535.68	5,801.94	5,577.79	19.24	20.10	94.00	-349.53	-259.92	580.12	541.63	38.49	15.074		
5,900.00	5,538.00	5,707.42	5,539.18	19.68	20.17	90.12	-435.67	-259.75	578.20	539.14	39.07	14.800		
5,907.46	5,538.00	5,700.94	5,535.97	19.72	20.18	89.80	-441.29	-259.74	578.19	539.08	39.11	14.784		
6,000.00	5,538.00	5,628.16	5,495.25	20.21	20.24	85.77	-501.55	-259.62	580.54	541.05	39.49	14.701 SF		
6,100.00	5,538.00	5,564.08	5,452.75	20.84	20.30	81.61	-549.46	-259.52	590.28	550.63	39.65	14.887		
6,200.00	5,538.00	5,512.64	5,414.58	21.55	20.33	77.94	-583.91	-259.45	609.65	570.09	39.56	15.410		
6,300.00	5,538.00	5,471.19	5,381.48	22.34	20.35	74.84	-608.82	-259.40	639.56	600.27	39.30	16.276		
6,400.00	5,538.00	5,437.48	5,353.16	23.19	20.36	72.26	-627.10	-259.36	679.80	640.86	38.94	17.458		
6,500.00	5,538.00	5,400.00	5,320.35	24.11	20.37	69.36	-645.22	-259.33	729.53	691.09	38.44	18.977		
6,600.00	5,538.00	5,386.65	5,308.36	25.08	20.37	68.32	-651.10	-259.31	787.14	748.92	38.22	20.597		
6,700.00	5,538.00	5,367.18	5,290.63	26.10	20.36	66.82	-659.11	-259.30	851.64	813.73	37.91	22.464		
6,800.00	5,538.00	5,350.00	5,274.73	27.16	20.36	65.50	-665.63	-259.28	921.73	884.08	37.65	24.479		
6,900.00	5,538.00	5,350.00	5,274.73	28.25	20.36	65.50	-665.63	-259.28	996.61	959.01	37.60	26.504		
7,000.00	5,538.00	5,323.94	5,250.24	29.38	20.34	63.52	-674.51	-259.27	1,074.71	1,037.42	37.30	28.815		
7,100.00	5,538.00	5,300.00	5,227.36	30.54	20.33	61.73	-681.58	-259.25	1,156.30	1,119.25	37.05	31.213		
7,200.00	5,538.00	5,300.00	5,227.36	31.73	20.33	61.73	-681.58	-259.25	1,239.95	1,202.90	37.05	33.468		
7,300.00	5,538.00	5,300.00	5,227.36	32.93	20.33	61.73	-681.58	-259.25	1,325.87	1,288.82	37.05	35.784		
7,400.00	5,538.00	5,300.00	5,227.36	34.16	20.33	61.73	-681.58	-259.25	1,413.64	1,376.59	37.06	38.147		
7,500.00	5,538.00	5,280.62	5,208.62	35.41	20.31	60.31	-686.53	-259.24	1,502.49	1,465.56	36.93	40.689		



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	0.89	49.59	0.77	49.60					
100.00	100.00	100.00	100.00	0.13	0.13	0.89	49.59	0.77	49.60	49.33	0.27	186.224		
200.00	200.00	200.00	200.00	0.47	0.47	0.89	49.59	0.77	49.60	48.66	0.94	52.730		
300.00	300.00	300.00	300.00	0.81	0.81	0.89	49.59	0.77	49.60	47.99	1.61	30.713		
400.00	399.98	401.67	401.65	1.14	1.11	-67.51	47.80	0.90	47.14	44.82	2.32	20.332		
500.00	499.84	502.84	502.67	1.47	1.42	-74.25	42.43	1.27	40.09	37.02	3.07	13.047		
600.00	599.52	603.11	602.55	1.81	1.74	-90.04	33.61	1.89	30.24	26.42	3.82	7.921		
700.00	699.20	702.44	701.12	2.15	2.07	-122.89	21.44	2.75	22.15	17.79	4.36	5.085		
730.38	729.48	732.39	730.75	2.25	2.17	-137.58	17.11	3.06	21.47	17.00	4.47	4.802	CC, ES, SF	
800.00	798.87	800.62	798.07	2.49	2.43	-170.78	6.07	3.83	25.43	20.52	4.91	5.177		
900.00	898.55	897.99	893.78	2.84	2.81	161.58	-11.81	5.09	41.45	35.65	5.80	7.146		
1,000.00	998.22	995.41	989.50	3.19	3.21	150.19	-29.92	6.37	61.71	55.18	6.53	9.446		
1,100.00	1,097.89	1,092.84	1,085.22	3.53	3.62	144.51	-48.04	7.65	83.15	75.94	7.21	11.538		
1,200.00	1,197.57	1,190.27	1,180.93	3.88	4.03	141.17	-66.16	8.92	105.05	97.19	7.86	13.361		
1,300.00	1,297.24	1,287.69	1,276.65	4.24	4.45	138.98	-84.28	10.20	127.18	118.66	8.52	14.927		
1,400.00	1,396.91	1,385.12	1,372.37	4.59	4.87	137.45	-102.39	11.47	149.43	140.25	9.18	16.281		
1,500.00	1,496.59	1,482.55	1,468.09	4.94	5.29	136.31	-120.51	12.75	171.75	161.92	9.84	17.458		
1,600.00	1,596.26	1,579.97	1,563.81	5.29	5.71	135.43	-138.63	14.03	194.13	183.63	10.50	18.485		
1,700.00	1,695.93	1,677.40	1,659.53	5.64	6.13	134.73	-156.75	15.30	216.54	205.37	11.17	19.389		
1,800.00	1,795.61	1,774.83	1,755.25	5.99	6.56	134.17	-174.86	16.58	238.97	227.14	11.84	20.188		
1,900.00	1,895.28	1,872.25	1,850.96	6.34	6.98	133.70	-192.98	17.86	261.43	248.92	12.51	20.900		
2,000.00	1,994.96	1,969.68	1,946.68	6.70	7.41	133.31	-211.10	19.13	283.89	270.71	13.18	21.537		
2,100.00	2,094.63	2,067.10	2,042.40	7.05	7.84	132.97	-229.22	20.41	306.37	292.51	13.86	22.110		
2,200.00	2,194.30	2,164.53	2,138.12	7.40	8.27	132.68	-247.34	21.68	328.86	314.32	14.53	22.628		
2,300.00	2,293.98	2,261.96	2,233.84	7.75	8.69	132.43	-265.45	22.96	351.35	336.14	15.21	23.098		
2,400.00	2,393.65	2,359.38	2,329.56	8.11	9.12	132.20	-283.57	24.24	373.85	357.96	15.89	23.527		
2,500.00	2,493.32	2,456.81	2,425.28	8.46	9.55	132.01	-301.69	25.51	396.35	379.78	16.57	23.919		
2,600.00	2,593.00	2,554.24	2,520.99	8.81	9.98	131.83	-319.81	26.79	418.86	401.61	17.25	24.279		
2,700.00	2,692.67	2,651.66	2,616.71	9.16	10.41	131.67	-337.92	28.07	441.37	423.44	17.93	24.610		
2,800.00	2,792.34	2,749.09	2,712.43	9.52	10.84	131.53	-356.04	29.34	463.89	445.27	18.62	24.917		
2,900.00	2,892.02	2,846.52	2,808.15	9.87	11.27	131.40	-374.16	30.62	486.40	467.10	19.30	25.201		
3,000.00	2,991.69	2,943.94	2,903.87	10.22	11.70	131.28	-392.28	31.89	508.92	488.94	19.99	25.465		
3,100.00	3,091.37	3,041.37	2,999.59	10.57	12.13	131.17	-410.39	33.17	531.44	510.77	20.67	25.711		
3,200.00	3,191.04	3,138.80	3,095.30	10.93	12.56	131.07	-428.51	34.45	553.96	532.61	21.36	25.940		
3,300.00	3,290.71	3,236.22	3,191.02	11.28	12.99	130.98	-446.63	35.72	576.49	554.45	22.04	26.155		
3,400.00	3,390.39	3,333.65	3,286.74	11.63	13.42	130.90	-464.75	37.00	599.01	576.29	22.73	26.356		
3,500.00	3,490.06	3,431.07	3,382.46	11.98	13.85	130.82	-482.87	38.27	621.54	598.12	23.41	26.545		
3,600.00	3,589.73	3,528.50	3,478.18	12.34	14.28	130.75	-500.98	39.55	644.07	619.96	24.10	26.723		
3,700.00	3,689.41	3,625.93	3,573.90	12.69	14.71	130.68	-519.10	40.83	666.59	641.81	24.79	26.891		
3,800.00	3,789.08	3,723.35	3,669.62	13.04	15.14	130.61	-537.22	42.10	689.12	663.65	25.48	27.049		
3,900.00	3,888.76	3,820.78	3,765.33	13.39	15.58	130.56	-555.34	43.38	711.65	685.49	26.16	27.199		
4,000.00	3,988.43	3,918.21	3,861.05	13.75	16.01	130.50	-573.45	44.66	734.18	707.33	26.85	27.341		
4,100.00	4,088.10	4,015.63	3,956.77	14.10	16.44	130.45	-591.57	45.93	756.71	729.17	27.54	27.475		
4,200.00	4,187.78	4,113.06	4,052.49	14.45	16.87	130.40	-609.69	47.21	779.25	751.01	28.23	27.603		
4,300.00	4,287.45	4,210.49	4,148.21	14.81	17.30	130.35	-627.81	48.48	801.78	772.86	28.92	27.724		
4,400.00	4,387.12	4,307.91	4,243.93	15.16	17.73	130.31	-645.92	49.76	824.31	794.70	29.61	27.840		
4,500.00	4,486.80	4,427.27	4,361.39	15.51	18.17	130.28	-664.03	51.05	846.84	816.68	30.31	27.952		
4,599.99	4,586.46	4,563.56	4,496.41	15.86	18.52	130.40	-682.14	52.34	869.37	838.70	31.02	27.671		
4,700.00	4,686.27	4,701.94	4,634.24	16.17	18.86	130.73	-697.58	53.40	891.90	860.66	31.73	27.443		
4,800.00	4,786.22	6,223.55	5,538.00	16.42	20.53	-157.25	137.93	53.81	796.95	781.21	15.74	50.642		
4,900.00	4,886.22	6,223.62	5,538.00	16.70	20.53	-90.00	138.00	53.81	703.46	686.32	17.14	41.052		
5,000.00	4,986.22	6,223.62	5,538.00	17.01	20.53	-90.00	138.00	53.81	611.96	593.00	18.96	32.269		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,100.00	5,086.02	6,219.02	5,538.00	17.29	20.51	102.75	133.41	53.81	523.76	502.39	21.37	24.505		
5,200.00	5,183.26	6,196.37	5,538.00	17.55	20.42	113.16	110.76	53.81	442.58	418.15	24.43	18.120		
5,300.00	5,274.40	6,155.59	5,538.00	17.81	20.28	116.20	69.98	53.81	373.52	345.42	28.10	13.291		
5,400.00	5,356.08	6,098.17	5,538.00	18.06	20.09	114.10	12.56	53.81	321.14	289.17	31.96	10.047		
5,500.00	5,425.31	6,026.22	5,538.00	18.31	19.93	108.45	-59.39	53.81	287.63	252.43	35.20	8.171		
5,600.00	5,479.55	5,942.39	5,538.00	18.57	19.80	101.09	-143.23	53.81	271.02	233.89	37.13	7.298		
5,700.00	5,516.79	5,847.69	5,535.04	18.87	19.72	93.67	-237.82	53.81	265.28	227.31	37.97	6.987		
5,748.24	5,528.25	5,802.28	5,528.26	19.04	19.72	90.00	-282.70	53.81	264.64	226.51	38.13	6.941		
5,800.00	5,535.68	5,755.15	5,517.10	19.24	19.72	86.11	-328.48	53.81	265.35	227.24	38.11	6.963		
5,900.00	5,538.00	5,668.96	5,486.22	19.68	19.76	78.93	-408.85	53.81	270.82	233.19	37.62	7.198		
6,000.00	5,538.00	5,594.03	5,448.92	20.21	19.82	71.40	-473.75	53.81	285.62	249.30	36.32	7.864		
6,100.00	5,538.00	5,531.23	5,410.75	20.84	19.87	64.32	-523.58	53.81	313.66	279.15	34.51	9.090		
6,200.00	5,538.00	5,479.24	5,374.81	21.55	19.90	58.34	-561.11	53.81	355.67	322.80	32.87	10.819		
6,300.00	5,538.00	5,436.29	5,342.41	22.34	19.93	53.53	-589.28	53.81	410.00	378.17	31.82	12.883		
6,400.00	5,538.00	5,400.00	5,313.30	23.19	19.95	49.67	-610.95	53.81	474.11	442.79	31.33	15.134		
6,500.00	5,538.00	5,370.92	5,288.93	24.11	19.96	46.74	-626.81	53.81	545.66	514.39	31.26	17.453		
6,600.00	5,538.00	5,350.00	5,270.87	25.08	19.96	44.73	-637.37	53.81	622.80	591.29	31.51	19.768		
6,700.00	5,538.00	5,324.51	5,248.32	26.10	19.96	42.41	-649.24	53.81	704.06	672.43	31.63	22.258		
6,800.00	5,538.00	5,300.00	5,226.11	27.16	19.96	40.31	-659.60	53.81	788.61	756.83	31.78	24.815		
6,900.00	5,538.00	5,300.00	5,226.11	28.25	19.96	40.31	-659.60	53.81	875.64	843.29	32.35	27.068		
7,000.00	5,538.00	5,276.53	5,204.41	29.38	19.95	38.43	-668.53	53.81	964.40	931.95	32.45	29.721		
7,100.00	5,538.00	5,250.00	5,179.42	30.54	19.94	36.43	-677.44	53.81	1,055.13	1,022.64	32.50	32.469		
7,200.00	5,538.00	5,250.00	5,179.42	31.73	19.94	36.43	-677.44	53.81	1,146.55	1,113.67	32.88	34.867		
7,300.00	5,538.00	5,250.00	5,179.42	32.93	19.94	36.43	-677.44	53.81	1,239.30	1,206.09	33.21	37.318		
7,400.00	5,538.00	5,250.00	5,179.42	34.16	19.94	36.43	-677.44	53.81	1,333.10	1,299.61	33.49	39.810		
7,500.00	5,538.00	5,227.74	5,158.13	35.41	19.92	34.86	-683.93	53.81	1,427.09	1,393.57	33.52	42.573		
7,600.00	5,538.00	5,220.75	5,151.39	36.67	19.92	34.39	-685.77	53.81	1,521.97	1,488.28	33.69	45.174		

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





**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	50.78	49.57	60.75	78.41					
100.00	100.00	100.00	100.00	0.13	0.13	50.78	49.57	60.75	78.41	78.14	0.27	294.384		
200.00	200.00	200.00	200.00	0.47	0.47	50.78	49.57	60.75	78.41	77.47	0.94	83.356		
300.00	300.00	300.00	300.00	0.81	0.81	50.78	49.57	60.75	78.41	76.79	1.61	48.552		
400.00	399.98	400.70	400.68	1.14	1.11	-14.88	47.95	61.44	76.25	74.00	2.25	33.856		
500.00	499.84	501.03	500.86	1.47	1.42	-11.83	43.09	63.52	69.92	67.03	2.89	24.208		
600.00	599.52	600.69	600.14	1.81	1.74	-5.28	35.08	66.95	60.76	57.22	3.54	17.169		
700.00	699.20	699.62	698.32	2.15	2.07	7.08	23.99	71.69	52.77	48.58	4.20	12.571		
795.36	794.25	793.07	790.64	2.47	2.41	25.14	10.66	77.39	49.42	44.48	4.94	10.004	CC	
800.00	798.87	797.59	795.09	2.49	2.43	26.13	9.94	77.70	49.43	44.45	4.98	9.926		
900.00	898.55	894.61	890.35	2.84	2.81	47.62	-6.92	84.91	54.56	48.65	5.90	9.240		
1,000.00	998.22	992.24	986.00	3.19	3.22	64.27	-24.96	92.62	67.05	60.38	6.66	10.060		
1,100.00	1,097.89	1,089.87	1,081.64	3.53	3.64	75.19	-43.00	100.33	83.36	76.04	7.32	11.382		
1,200.00	1,197.57	1,187.51	1,177.28	3.88	4.07	82.43	-61.03	108.05	101.68	93.73	7.95	12.793		
1,300.00	1,297.24	1,285.14	1,272.92	4.24	4.49	87.42	-79.07	115.76	121.09	112.52	8.58	14.118		
1,400.00	1,396.91	1,382.77	1,368.56	4.59	4.93	91.02	-97.11	123.47	141.15	131.94	9.21	15.324		
1,500.00	1,496.59	1,480.40	1,464.21	4.94	5.36	93.73	-115.14	131.19	161.62	151.77	9.85	16.404		
1,600.00	1,596.26	1,578.04	1,559.85	5.29	5.80	95.83	-133.18	138.90	182.35	171.85	10.50	17.364		
1,700.00	1,695.93	1,675.67	1,655.49	5.64	6.24	97.49	-151.22	146.61	203.27	192.12	11.16	18.219		
1,800.00	1,795.61	1,773.30	1,751.13	5.99	6.67	98.85	-169.25	154.33	224.33	212.51	11.82	18.981		
1,900.00	1,895.28	1,870.94	1,846.78	6.34	7.11	99.97	-187.29	162.04	245.48	233.00	12.48	19.663		
2,000.00	1,994.96	1,968.57	1,942.42	6.70	7.56	100.92	-205.33	169.75	266.71	253.56	13.15	20.276		
2,100.00	2,094.63	2,066.20	2,038.06	7.05	8.00	101.72	-223.36	177.47	288.00	274.17	13.83	20.829		
2,200.00	2,194.30	2,163.84	2,133.70	7.40	8.44	102.42	-241.40	185.18	309.34	294.83	14.50	21.329		
2,300.00	2,293.98	2,261.47	2,229.34	7.75	8.88	103.02	-259.44	192.89	330.71	315.53	15.18	21.784		
2,400.00	2,393.65	2,359.10	2,324.99	8.11	9.33	103.56	-277.48	200.60	352.12	336.25	15.86	22.199		
2,500.00	2,493.32	2,456.74	2,420.63	8.46	9.77	104.03	-295.51	208.32	373.55	357.00	16.54	22.579		
2,600.00	2,593.00	2,554.37	2,516.27	8.81	10.21	104.45	-313.55	216.03	395.00	377.77	17.23	22.928		
2,700.00	2,692.67	2,652.00	2,611.91	9.16	10.66	104.82	-331.59	223.74	416.47	398.56	17.91	23.250		
2,800.00	2,792.34	2,749.64	2,707.55	9.52	11.10	105.16	-349.62	231.46	437.96	419.36	18.60	23.547		
2,900.00	2,892.02	2,847.27	2,803.20	9.87	11.55	105.47	-367.66	239.17	459.45	440.17	19.29	23.822		
3,000.00	2,991.69	2,944.90	2,898.84	10.22	11.99	105.75	-385.70	246.88	480.97	460.99	19.98	24.078		
3,100.00	3,091.37	3,042.54	2,994.48	10.57	12.44	106.01	-403.73	254.60	502.49	481.82	20.66	24.316		
3,200.00	3,191.04	3,140.17	3,090.12	10.93	12.88	106.24	-421.77	262.31	524.02	502.66	21.35	24.539		
3,300.00	3,290.71	3,237.80	3,185.77	11.28	13.33	106.46	-439.81	270.02	545.55	523.51	22.05	24.747		
3,400.00	3,390.39	3,335.44	3,281.41	11.63	13.77	106.66	-457.84	277.74	567.10	544.36	22.74	24.942		
3,500.00	3,490.06	3,433.07	3,377.05	11.98	14.22	106.85	-475.88	285.45	588.65	565.22	23.43	25.125		
3,600.00	3,589.73	3,530.70	3,472.69	12.34	14.66	107.02	-493.92	293.16	610.20	586.08	24.12	25.298		
3,700.00	3,689.41	3,628.33	3,568.33	12.69	15.11	107.18	-511.95	300.87	631.76	606.95	24.81	25.460		
3,800.00	3,789.08	3,725.97	3,663.98	13.04	15.55	107.33	-529.99	308.59	653.33	627.82	25.51	25.613		
3,900.00	3,888.76	3,823.60	3,759.62	13.39	16.00	107.47	-548.03	316.30	674.90	648.70	26.20	25.758		
4,000.00	3,988.43	3,921.23	3,855.26	13.75	16.45	107.60	-566.06	324.01	696.47	669.58	26.90	25.895		
4,100.00	4,088.10	4,018.87	3,950.90	14.10	16.89	107.73	-584.10	331.73	718.05	690.46	27.59	26.026		
4,200.00	4,187.78	4,116.50	4,046.54	14.45	17.34	107.84	-602.14	339.44	739.63	711.34	28.28	26.149		
4,300.00	4,287.45	4,214.13	4,142.19	14.81	17.78	107.95	-620.17	347.15	761.21	732.23	28.98	26.267		
4,400.00	4,387.12	4,311.77	4,237.83	15.16	18.23	108.06	-638.21	354.87	782.79	753.12	29.68	26.378		
4,500.00	4,486.80	4,418.32	4,342.25	15.51	18.67	108.17	-657.22	363.21	804.24	773.82	30.42	26.438		
4,599.99	4,586.46	4,552.81	4,474.85	15.86	19.04	108.40	-678.29	372.00	822.57	791.31	31.26	26.316		
4,700.00	4,686.27	4,689.34	4,610.39	16.17	19.40	108.87	-693.29	378.42	835.92	803.93	31.99	26.128		
4,800.00	4,786.22	6,305.12	5,606.00	16.42	20.81	26.93	137.93	383.61	822.38	813.46	8.92	92.198		
4,900.00	4,886.22	6,305.18	5,606.00	16.70	20.81	90.00	138.00	383.61	722.72	713.78	8.94	80.823		
5,000.00	4,986.22	6,305.18	5,606.00	17.01	20.81	90.00	138.00	383.61	623.19	614.17	9.02	69.088		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,100.00	5,086.02	6,300.59	5,606.00	17.29	20.79	-136.59	133.41	383.61	524.05	514.90	9.15	57.282		
5,200.00	5,183.26	6,277.94	5,606.00	17.55	20.72	-154.22	110.76	383.61	427.73	418.46	9.27	46.136		
5,300.00	5,274.40	6,237.16	5,606.00	17.81	20.61	-158.31	69.98	383.61	337.94	328.37	9.57	35.300		
5,400.00	5,356.08	6,179.74	5,606.00	18.06	20.47	-158.17	12.56	383.61	258.27	247.80	10.47	24.665		
5,500.00	5,425.31	6,107.79	5,606.00	18.31	20.35	-155.29	-59.39	383.61	192.08	179.50	12.58	15.273		
5,600.00	5,479.55	6,023.96	5,606.00	18.57	20.30	-149.87	-143.23	383.61	142.25	125.90	16.35	8.701		
5,700.00	5,516.79	5,920.98	5,602.34	18.87	20.32	-140.55	-246.06	383.61	108.02	86.54	21.48	5.029		
5,800.00	5,535.68	5,815.90	5,579.51	19.24	20.40	-122.97	-348.45	383.61	79.86	49.59	30.27	2.638		
5,900.00	5,538.00	5,720.55	5,541.40	19.68	20.50	-92.98	-435.71	383.61	65.27	26.39	38.88	1.679		
5,907.94	5,538.00	5,713.59	5,538.00	19.72	20.51	-90.00	-441.78	383.61	65.16	25.94	39.22	1.662 ES, SF		
6,000.00	5,538.00	5,640.45	5,497.54	20.21	20.59	-58.16	-502.63	383.61	82.81	46.49	36.31	2.280		
6,100.00	5,538.00	5,575.64	5,454.86	20.84	20.65	-38.09	-551.36	383.61	134.01	102.23	31.79	4.216		
6,200.00	5,538.00	5,523.61	5,416.44	21.55	20.69	-28.19	-586.40	383.61	201.89	170.92	30.97	6.520		
6,300.00	5,538.00	5,481.71	5,383.07	22.34	20.71	-22.81	-611.73	383.61	278.53	247.13	31.40	8.871		
6,400.00	5,538.00	5,450.00	5,356.53	23.19	20.72	-19.75	-629.07	383.61	360.63	328.45	32.19	11.204		
6,500.00	5,538.00	5,419.63	5,330.17	24.11	20.73	-17.41	-644.13	383.61	446.44	413.73	32.70	13.651		
6,600.00	5,538.00	5,400.00	5,312.68	25.08	20.73	-16.13	-653.04	383.61	534.96	501.59	33.37	16.031		
6,700.00	5,538.00	5,376.68	5,291.48	26.10	20.72	-14.81	-662.76	383.61	625.41	591.70	33.72	18.550		
6,800.00	5,538.00	5,350.00	5,266.72	27.16	20.71	-13.51	-672.70	383.61	717.59	683.70	33.89	21.177		
6,900.00	5,538.00	5,350.00	5,266.72	28.25	20.71	-13.51	-672.70	383.61	810.65	776.15	34.51	23.493		
7,000.00	5,538.00	5,333.12	5,250.81	29.38	20.70	-12.78	-678.34	383.61	904.77	870.07	34.70	26.072		
7,100.00	5,538.00	5,322.20	5,240.42	30.54	20.69	-12.35	-681.70	383.61	999.68	964.74	34.94	28.611		
7,200.00	5,538.00	5,300.00	5,219.10	31.73	20.68	-11.55	-687.87	383.61	1,095.44	1,060.44	34.99	31.303		
7,300.00	5,538.00	5,300.00	5,219.10	32.93	20.68	-11.55	-687.87	383.61	1,191.29	1,156.00	35.29	33.757		
7,400.00	5,538.00	5,300.00	5,219.10	34.16	20.68	-11.55	-687.87	383.61	1,287.78	1,252.24	35.53	36.240		
7,500.00	5,538.00	5,300.00	5,219.10	35.41	20.68	-11.55	-687.87	383.61	1,384.76	1,349.02	35.74	38.742		
7,600.00	5,538.00	5,300.00	5,219.10	36.67	20.68	-11.55	-687.87	383.61	1,482.15	1,446.22	35.92	41.258		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	-60.93	49.59	-89.20	102.06					
100.00	100.00	100.00	100.00	0.13	0.13	-60.93	49.59	-89.20	102.06	101.79	0.27	383.164		
200.00	200.00	200.00	200.00	0.47	0.47	-60.93	49.59	-89.20	102.06	101.11	0.94	108.495		
300.00	300.00	300.00	300.00	0.81	0.81	-60.93	49.59	-89.20	102.06	100.44	1.61	63.194 CC, ES		
400.00	399.98	400.45	400.43	1.14	1.11	-129.23	47.93	-89.80	102.89	100.65	2.24	45.876		
500.00	499.84	500.29	500.12	1.47	1.41	-134.19	43.02	-91.60	105.95	103.09	2.86	37.050		
600.00	599.52	599.02	598.48	1.81	1.73	-141.44	34.95	-94.56	112.04	108.53	3.52	31.872		
700.00	699.20	696.66	695.39	2.15	2.06	-149.40	23.84	-98.63	120.65	116.44	4.21	28.684		
800.00	798.87	792.99	790.56	2.49	2.41	-157.47	9.85	-103.75	132.50	127.55	4.94	26.803		
900.00	898.55	888.99	884.92	2.84	2.78	-165.11	-6.73	-109.82	148.01	142.32	5.69	25.997		
1,000.00	998.22	985.83	980.03	3.19	3.18	-171.44	-23.86	-116.09	165.97	159.56	6.41	25.886		
1,100.00	1,097.89	1,082.68	1,075.14	3.53	3.59	-176.52	-40.99	-122.37	185.55	178.44	7.11	26.098		
1,200.00	1,197.57	1,179.52	1,170.25	3.88	4.00	179.38	-58.12	-128.64	206.28	198.49	7.79	26.483		
1,300.00	1,297.24	1,276.36	1,265.36	4.24	4.41	176.03	-75.25	-134.91	227.86	219.40	8.47	26.916		
1,400.00	1,396.91	1,373.20	1,360.46	4.59	4.83	173.25	-92.38	-141.18	250.07	240.93	9.13	27.375		
1,500.00	1,496.59	1,470.04	1,455.57	4.94	5.25	170.93	-109.51	-147.46	272.74	262.94	9.80	27.828		
1,600.00	1,596.26	1,566.88	1,550.68	5.29	5.67	168.96	-126.64	-153.73	295.78	285.32	10.47	28.262		
1,700.00	1,695.93	1,663.73	1,645.79	5.64	6.09	167.28	-143.77	-160.00	319.11	307.98	11.13	28.671		
1,800.00	1,795.61	1,760.57	1,740.89	5.99	6.52	165.83	-160.90	-166.28	342.66	330.87	11.79	29.052		
1,900.00	1,895.28	1,857.41	1,836.00	6.34	6.94	164.56	-178.03	-172.55	366.40	353.94	12.46	29.406		
2,000.00	1,994.96	1,954.25	1,931.11	6.70	7.37	163.44	-195.17	-178.82	390.28	377.15	13.13	29.735		
2,100.00	2,094.63	2,051.09	2,026.22	7.05	7.80	162.46	-212.30	-185.10	414.29	400.50	13.79	30.038		
2,200.00	2,194.30	2,147.93	2,121.32	7.40	8.22	161.58	-229.43	-191.37	438.40	423.94	14.46	30.319		
2,300.00	2,293.98	2,244.77	2,216.43	7.75	8.65	160.79	-246.56	-197.64	462.60	447.47	15.13	30.580		
2,400.00	2,393.65	2,341.62	2,311.54	8.11	9.08	160.09	-263.69	-203.91	486.87	471.07	15.80	30.822		
2,500.00	2,493.32	2,438.46	2,406.65	8.46	9.51	159.44	-280.82	-210.19	511.21	494.74	16.47	31.046		
2,600.00	2,593.00	2,535.30	2,501.75	8.81	9.93	158.86	-297.95	-216.46	535.60	518.46	17.14	31.255		
2,700.00	2,692.67	2,632.14	2,596.86	9.16	10.36	158.33	-315.08	-222.73	560.04	542.23	17.81	31.450		
2,800.00	2,792.34	2,728.98	2,691.97	9.52	10.79	157.84	-332.21	-229.01	584.52	566.04	18.48	31.631		
2,900.00	2,892.02	2,825.82	2,787.08	9.87	11.22	157.39	-349.34	-235.28	609.04	589.89	19.15	31.801		
3,000.00	2,991.69	2,922.67	2,882.19	10.22	11.65	156.98	-366.47	-241.55	633.59	613.76	19.82	31.960		
3,100.00	3,091.37	3,019.51	2,977.29	10.57	12.08	156.59	-383.60	-247.83	658.17	637.67	20.50	32.110		
3,200.00	3,191.04	3,116.35	3,072.40	10.93	12.51	156.24	-400.73	-254.10	682.77	661.60	21.17	32.250		
3,300.00	3,290.71	3,213.19	3,167.51	11.28	12.94	155.91	-417.87	-260.37	707.40	685.56	21.85	32.382		
3,400.00	3,390.39	3,310.03	3,262.62	11.63	13.37	155.60	-435.00	-266.64	732.05	709.53	22.52	32.506		
3,500.00	3,490.06	3,406.87	3,357.72	11.98	13.80	155.31	-452.13	-272.92	756.72	733.52	23.20	32.624		
3,600.00	3,589.73	3,503.71	3,452.83	12.34	14.23	155.04	-469.26	-279.19	781.40	757.53	23.87	32.735		
3,700.00	3,689.41	3,600.56	3,547.94	12.69	14.66	154.78	-486.39	-285.46	806.10	781.56	24.55	32.840		
3,800.00	3,789.08	3,697.40	3,643.05	13.04	15.09	154.54	-503.52	-291.74	830.82	805.59	25.22	32.939		
3,900.00	3,888.76	3,794.24	3,738.15	13.39	15.52	154.32	-520.65	-298.01	855.54	829.64	25.90	33.034		
4,000.00	3,988.43	3,891.08	3,833.26	13.75	15.95	154.11	-537.78	-304.28	880.28	853.71	26.58	33.124		
4,100.00	4,088.10	3,987.92	3,928.37	14.10	16.38	153.91	-554.91	-310.56	905.03	877.78	27.25	33.209		
4,200.00	4,187.78	4,084.76	4,023.48	14.45	16.81	153.72	-572.04	-316.83	929.79	901.86	27.93	33.290		
4,300.00	4,287.45	4,181.61	4,118.58	14.81	17.24	153.54	-589.17	-323.10	954.56	925.95	28.61	33.368		
4,400.00	4,387.12	4,278.45	4,213.69	15.16	17.67	153.36	-606.30	-329.37	979.33	950.05	29.28	33.442		
4,500.00	4,486.80	4,375.29	4,308.80	15.51	18.10	153.20	-623.43	-335.65	1,004.12	974.16	29.96	33.512		
4,599.99	4,586.46	4,472.12	4,403.90	15.86	18.53	153.05	-640.56	-341.92	1,028.91	998.27	30.64	33.580		
4,700.00	4,686.27	4,582.82	4,512.67	16.17	18.99	153.05	-659.90	-349.00	1,052.01	1,020.66	31.35	33.599		
4,800.00	4,786.22	4,734.27	4,662.41	16.42	19.40	152.89	-681.08	-356.75	1,068.55	1,036.41	32.14	33.250		
4,900.00	4,886.22	4,888.32	4,815.73	16.70	19.78	-140.76	-694.96	-361.84	1,077.77	1,044.89	32.88	32.775		
5,000.00	4,986.22	6,417.15	5,735.00	17.01	21.09	-90.53	131.57	-371.96	1,018.52	992.34	26.18	38.898		
5,100.00	5,086.02	6,412.56	5,735.00	17.29	21.07	96.58	126.97	-371.92	947.54	919.43	28.11	33.709		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,200.00	5,183.26	6,389.91	5,735.00	17.55	21.00	103.84	104.33	-371.71	883.62	853.57	30.05	29.409		
5,300.00	5,274.40	6,349.13	5,735.00	17.81	20.88	107.84	63.55	-371.33	829.45	797.56	31.89	26.008		
5,400.00	5,356.08	6,291.71	5,735.00	18.06	20.74	109.33	6.13	-370.80	786.56	753.04	33.52	23.465		
5,500.00	5,425.31	6,219.76	5,735.00	18.31	20.63	109.12	-65.81	-370.12	755.04	720.15	34.89	21.643		
5,600.00	5,479.55	6,135.93	5,735.00	18.57	20.57	108.03	-149.64	-369.34	733.73	697.75	35.98	20.395		
5,700.00	5,516.79	6,000.18	5,724.46	18.87	20.59	105.11	-284.68	-368.09	718.92	682.00	36.92	19.473		
5,800.00	5,535.68	5,864.83	5,680.56	19.24	20.70	101.29	-412.30	-366.90	704.86	666.74	38.13	18.488		
5,900.00	5,538.00	5,753.01	5,620.47	19.68	20.81	96.87	-506.34	-366.02	693.22	653.99	39.23	17.669		
6,000.00	5,538.00	5,668.70	5,562.64	20.21	20.88	92.06	-567.57	-365.45	685.17	645.03	40.15	17.067		
6,058.45	5,538.00	5,630.14	5,533.06	20.57	20.91	89.59	-592.29	-365.22	683.69	643.12	40.57	16.853		
6,100.00	5,538.00	5,606.57	5,514.11	20.84	20.92	88.00	-606.30	-365.09	684.51	643.71	40.80	16.779 SF		
6,200.00	5,538.00	5,560.11	5,474.99	21.55	20.93	84.73	-631.33	-364.85	693.82	652.62	41.20	16.842		
6,300.00	5,538.00	5,524.58	5,443.65	22.34	20.93	82.14	-648.07	-364.70	714.22	672.84	41.37	17.262		
6,400.00	5,538.00	5,500.00	5,421.35	23.19	20.93	80.31	-658.38	-364.60	745.69	704.28	41.40	18.011		
6,500.00	5,538.00	5,474.51	5,397.72	24.11	20.91	78.39	-667.94	-364.51	787.40	746.15	41.25	19.089		
6,600.00	5,538.00	5,450.00	5,374.59	25.08	20.90	76.54	-676.05	-364.44	838.22	797.23	40.99	20.450		
6,700.00	5,538.00	5,450.00	5,374.59	26.10	20.90	76.54	-676.05	-364.44	896.75	855.88	40.87	21.941		
6,800.00	5,538.00	5,428.68	5,354.18	27.16	20.88	74.93	-682.20	-364.38	961.60	921.06	40.54	23.719		
6,900.00	5,538.00	5,417.90	5,343.77	28.25	20.87	74.12	-684.99	-364.35	1,031.85	991.56	40.29	25.609		
7,000.00	5,538.00	5,400.00	5,326.36	29.38	20.85	72.78	-689.15	-364.32	1,106.55	1,066.56	39.99	27.668		
7,100.00	5,538.00	5,400.00	5,326.36	30.54	20.85	72.78	-689.15	-364.32	1,184.65	1,144.79	39.85	29.726		
7,200.00	5,538.00	5,400.00	5,326.36	31.73	20.85	72.78	-689.15	-364.32	1,265.83	1,226.11	39.72	31.868		
7,300.00	5,538.00	5,400.00	5,326.36	32.93	20.85	72.78	-689.15	-364.32	1,349.54	1,309.94	39.60	34.079		
7,400.00	5,538.00	5,381.61	5,308.34	34.16	20.83	71.41	-692.80	-364.28	1,434.93	1,395.56	39.38	36.440		
7,500.00	5,538.00	5,376.62	5,303.42	35.41	20.82	71.04	-693.68	-364.27	1,522.22	1,482.96	39.26	38.771		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	-30.51	49.59	-29.22	57.56					
100.00	100.00	100.00	100.00	0.13	0.13	-30.51	49.59	-29.22	57.56	57.29	0.27	216.092		
200.00	200.00	200.00	200.00	0.47	0.47	-30.51	49.59	-29.22	57.56	56.62	0.94	61.187		
300.00	300.00	300.00	300.00	0.81	0.81	-30.51	49.59	-29.22	57.56	55.94	1.61	35.639		
400.00	399.98	401.54	401.52	1.14	1.11	-99.98	47.80	-29.42	56.42	54.13	2.29	24.686		
500.00	499.84	502.52	502.35	1.47	1.42	-109.22	42.47	-30.00	53.92	50.98	2.95	18.307		
599.99	599.54	602.54	601.98	1.81	1.74	-124.39	33.72	-30.96	52.41	48.84	3.57	14.677	CC, ES	
600.00	599.52	602.50	601.94	1.81	1.74	-124.72	33.73	-30.96	52.62	49.05	3.57	14.743		
700.00	699.20	701.45	700.14	2.15	2.07	-143.29	21.67	-32.28	54.80	50.61	4.19	13.078		
800.00	798.87	799.17	796.65	2.49	2.42	-161.84	6.47	-33.94	62.72	57.81	4.91	12.779		
900.00	898.55	896.65	892.66	2.84	2.80	-176.37	-10.30	-35.78	76.40	70.72	5.68	13.454		
1,000.00	998.22	994.13	988.67	3.19	3.19	173.83	-27.07	-37.62	93.46	87.05	6.41	14.578		
1,100.00	1,097.89	1,091.61	1,084.67	3.53	3.59	167.13	-43.84	-39.45	112.39	105.27	7.11	15.805		
1,200.00	1,197.57	1,189.09	1,180.68	3.88	4.00	162.39	-60.61	-41.29	132.37	124.58	7.79	16.993		
1,300.00	1,297.24	1,286.56	1,276.69	4.24	4.40	158.90	-77.38	-43.13	153.00	144.54	8.46	18.079		
1,400.00	1,396.91	1,384.04	1,372.69	4.59	4.81	156.25	-94.15	-44.96	174.05	164.92	9.13	19.060		
1,500.00	1,496.59	1,481.52	1,468.70	4.94	5.22	154.16	-110.92	-46.80	195.38	185.58	9.80	19.938		
1,600.00	1,596.26	1,579.00	1,564.71	5.29	5.63	152.49	-127.69	-48.64	216.90	206.44	10.47	20.723		
1,700.00	1,695.93	1,676.48	1,660.71	5.64	6.05	151.12	-144.46	-50.47	238.58	227.44	11.14	21.424		
1,800.00	1,795.61	1,773.95	1,756.72	5.99	6.46	149.97	-161.23	-52.31	260.36	248.55	11.81	22.053		
1,900.00	1,895.28	1,871.43	1,852.73	6.34	6.87	149.01	-178.00	-54.15	282.23	269.75	12.48	22.619		
2,000.00	1,994.96	1,968.91	1,948.74	6.70	7.29	148.18	-194.77	-55.98	304.16	291.01	13.15	23.130		
2,100.00	2,094.63	2,066.39	2,044.74	7.05	7.71	147.46	-211.54	-57.82	326.14	312.32	13.82	23.593		
2,200.00	2,194.30	2,163.86	2,140.75	7.40	8.12	146.84	-228.31	-59.66	348.17	333.67	14.50	24.014		
2,300.00	2,293.98	2,261.34	2,236.76	7.75	8.54	146.29	-245.08	-61.49	370.23	355.06	15.17	24.398		
2,400.00	2,393.65	2,358.82	2,332.76	8.11	8.96	145.80	-261.85	-63.33	392.32	376.47	15.85	24.750		
2,500.00	2,493.32	2,456.30	2,428.77	8.46	9.37	145.36	-278.62	-65.17	414.43	397.91	16.53	25.074		
2,600.00	2,593.00	2,553.78	2,524.78	8.81	9.79	144.97	-295.39	-67.00	436.57	419.36	17.21	25.372		
2,700.00	2,692.67	2,651.25	2,620.78	9.16	10.21	144.61	-312.16	-68.84	458.72	440.84	17.89	25.647		
2,800.00	2,792.34	2,748.73	2,716.79	9.52	10.63	144.29	-328.93	-70.68	480.89	462.33	18.57	25.902		
2,900.00	2,892.02	2,846.21	2,812.80	9.87	11.05	143.99	-345.70	-72.51	503.07	483.83	19.25	26.139		
3,000.00	2,991.69	2,943.69	2,908.80	10.22	11.47	143.73	-362.47	-74.35	525.27	505.34	19.93	26.360		
3,100.00	3,091.37	3,041.16	3,004.81	10.57	11.88	143.48	-379.24	-76.19	547.47	526.86	20.61	26.566		
3,200.00	3,191.04	3,138.64	3,100.82	10.93	12.30	143.25	-396.01	-78.02	569.68	548.39	21.29	26.759		
3,300.00	3,290.71	3,236.12	3,196.82	11.28	12.72	143.04	-412.78	-79.86	591.90	569.93	21.97	26.939		
3,400.00	3,390.39	3,333.60	3,292.83	11.63	13.14	142.84	-429.55	-81.70	614.13	591.47	22.65	27.109		
3,500.00	3,490.06	3,431.08	3,388.84	11.98	13.56	142.66	-446.32	-83.53	636.36	613.02	23.34	27.269		
3,600.00	3,589.73	3,528.55	3,484.85	12.34	13.98	142.49	-463.09	-85.37	658.60	634.58	24.02	27.419		
3,700.00	3,689.41	3,626.03	3,580.85	12.69	14.40	142.33	-479.86	-87.21	680.84	656.14	24.70	27.561		
3,800.00	3,789.08	3,723.51	3,676.86	13.04	14.82	142.18	-496.63	-89.04	703.09	677.71	25.39	27.695		
3,900.00	3,888.76	3,820.99	3,772.87	13.39	15.24	142.04	-513.40	-90.88	725.35	699.28	26.07	27.822		
4,000.00	3,988.43	3,918.46	3,868.87	13.75	15.66	141.91	-530.17	-92.72	747.60	720.85	26.76	27.942		
4,100.00	4,088.10	4,015.94	3,964.88	14.10	16.08	141.79	-546.94	-94.55	769.86	742.42	27.44	28.057		
4,200.00	4,187.78	4,113.42	4,060.89	14.45	16.50	141.67	-563.71	-96.39	792.13	764.00	28.12	28.165		
4,300.00	4,287.45	4,210.90	4,156.89	14.81	16.92	141.56	-580.48	-98.23	814.39	785.58	28.81	28.269		
4,400.00	4,387.12	4,308.38	4,252.90	15.16	17.34	141.46	-597.25	-100.06	836.66	807.17	29.49	28.367		
4,500.00	4,486.80	4,405.85	4,348.91	15.51	17.75	141.36	-614.02	-101.90	858.94	828.76	30.18	28.461		
4,599.99	4,586.46	4,503.32	4,444.91	15.86	18.17	141.27	-630.79	-103.74	881.21	850.34	30.86	28.551		
4,700.00	4,686.27	4,601.08	4,541.19	16.17	18.60	141.37	-647.61	-105.58	902.14	870.64	31.50	28.640		
4,800.00	4,786.22	4,714.32	4,652.80	16.42	19.03	141.27	-666.66	-107.66	920.12	887.95	32.16	28.608		
4,900.00	4,886.22	4,856.21	4,793.44	16.70	19.39	-152.52	-685.17	-109.69	932.48	899.56	32.92	28.325		
5,000.00	4,986.22	6,499.15	5,820.00	17.01	21.41	-90.00	138.00	-111.47	938.09	918.35	19.74	47.525		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,100.00	5,086.02	6,494.56	5,820.00	17.29	21.39	102.74	133.41	-111.47	850.62	829.23	21.39	39.768		
5,200.00	5,183.26	6,471.91	5,820.00	17.55	21.31	115.30	110.76	-111.47	768.29	745.05	23.24	33.060		
5,300.00	5,274.40	6,431.13	5,820.00	17.81	21.17	122.09	69.98	-111.47	694.63	669.38	25.25	27.514		
5,400.00	5,356.08	6,373.71	5,820.00	18.06	21.00	125.08	12.56	-111.47	632.50	605.17	27.33	23.145		
5,500.00	5,425.31	6,301.76	5,820.00	18.31	20.82	125.73	-59.39	-111.47	583.62	554.29	29.33	19.898		
5,600.00	5,479.55	6,217.92	5,820.00	18.57	20.70	125.11	-143.23	-111.47	548.40	517.29	31.11	17.628		
5,700.00	5,516.79	6,050.85	5,803.89	18.87	20.63	120.65	-308.96	-111.47	522.11	489.13	32.98	15.829		
5,800.00	5,535.68	5,880.98	5,736.12	19.24	20.71	113.54	-463.90	-111.47	491.84	455.73	36.11	13.619		
5,900.00	5,538.00	5,756.29	5,656.46	19.68	20.79	105.40	-559.44	-111.47	463.29	424.62	38.67	11.980		
6,000.00	5,538.00	5,672.14	5,590.85	20.21	20.82	97.01	-611.99	-111.47	440.15	399.82	40.33	10.913		
6,100.00	5,538.00	5,615.09	5,541.94	20.84	20.83	90.52	-641.31	-111.47	430.00	388.88	41.13	10.455		
6,109.52	5,538.00	5,610.64	5,538.00	20.91	20.83	90.00	-643.36	-111.47	429.92	388.76	41.17	10.444 SF		
6,200.00	5,538.00	5,574.75	5,505.56	21.55	20.82	85.68	-658.72	-111.47	437.64	396.49	41.15	10.635		
6,300.00	5,538.00	5,550.00	5,482.62	22.34	20.81	82.66	-667.98	-111.47	464.12	423.44	40.68	11.410		
6,400.00	5,538.00	5,522.39	5,456.54	23.19	20.79	79.27	-677.03	-111.47	507.37	467.52	39.85	12.732		
6,500.00	5,538.00	5,500.00	5,435.05	24.11	20.77	76.53	-683.34	-111.47	564.16	525.15	39.02	14.460		
6,600.00	5,538.00	5,500.00	5,435.05	25.08	20.77	76.53	-683.34	-111.47	631.17	592.62	38.55	16.372		
6,700.00	5,538.00	5,478.59	5,414.27	26.10	20.75	73.94	-688.50	-111.47	705.36	667.45	37.91	18.604		
6,800.00	5,538.00	5,468.80	5,404.71	27.16	20.73	72.77	-690.58	-111.47	785.10	747.57	37.53	20.920		
6,900.00	5,538.00	5,450.00	5,386.24	28.25	20.71	70.56	-694.06	-111.47	868.99	831.86	37.13	23.404		
7,000.00	5,538.00	5,450.00	5,386.24	29.38	20.71	70.56	-694.06	-111.47	955.56	918.55	37.00	25.823		
7,100.00	5,538.00	5,450.00	5,386.24	30.54	20.71	70.56	-694.06	-111.47	1,044.53	1,007.62	36.91	28.298		
7,200.00	5,538.00	5,450.00	5,386.24	31.73	20.71	70.56	-694.06	-111.47	1,135.34	1,098.50	36.85	30.812		
7,300.00	5,538.00	5,450.00	5,386.24	32.93	20.71	70.56	-694.06	-111.47	1,227.58	1,190.78	36.80	33.354		
7,400.00	5,538.00	5,450.00	5,386.24	34.16	20.71	70.56	-694.06	-111.47	1,320.95	1,284.17	36.78	35.916		
7,500.00	5,538.00	5,429.17	5,365.63	35.41	20.68	68.15	-697.13	-111.47	1,414.68	1,378.05	36.63	38.621		
7,600.00	5,538.00	5,425.78	5,362.27	36.67	20.67	67.77	-697.56	-111.47	1,509.51	1,472.89	36.62	41.224		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	31.81	49.59	30.76	58.35					
100.00	100.00	100.00	100.00	0.13	0.13	31.81	49.59	30.76	58.35	58.09	0.27	219.080		
200.00	200.00	200.00	200.00	0.47	0.47	31.81	49.59	30.76	58.35	57.41	0.94	62.033		
300.00	300.00	300.00	300.00	0.81	0.81	31.81	49.59	30.76	58.35	56.74	1.61	36.132		
400.00	399.98	401.37	401.35	1.14	1.11	-34.50	47.85	31.19	55.69	53.40	2.28	24.381		
500.00	499.84	502.30	502.13	1.47	1.42	-33.56	42.66	32.49	47.71	44.73	2.98	16.001		
600.00	599.52	602.45	601.88	1.81	1.74	-30.17	34.11	34.62	35.22	31.53	3.69	9.536		
700.00	699.20	701.75	700.44	2.15	2.07	-15.27	22.30	37.57	21.16	16.86	4.30	4.921		
785.74	784.66	786.07	783.74	2.44	2.38	32.73	9.68	40.73	13.53	8.66	4.87	2.781 CC, ES		
800.00	798.87	800.00	797.47	2.49	2.43	44.37	7.36	41.31	13.84	8.78	5.06	2.734		
900.00	898.55	897.69	893.54	2.84	2.82	91.59	-9.83	45.60	27.63	21.58	6.05	4.564		
1,000.00	998.22	995.45	989.66	3.19	3.21	104.32	-27.14	49.92	47.15	40.50	6.66	7.085		
1,100.00	1,097.89	1,093.21	1,085.77	3.53	3.62	109.50	-44.45	54.25	67.60	60.34	7.26	9.309		
1,200.00	1,197.57	1,190.97	1,181.89	3.88	4.03	112.27	-61.76	58.57	88.33	80.45	7.88	11.206		
1,300.00	1,297.24	1,288.73	1,278.01	4.24	4.45	113.99	-79.07	62.89	109.19	100.67	8.52	12.813		
1,400.00	1,396.91	1,386.49	1,374.12	4.59	4.86	115.16	-96.38	67.22	130.11	120.94	9.17	14.190		
1,500.00	1,496.59	1,484.25	1,470.24	4.94	5.28	116.00	-113.69	71.54	151.06	141.24	9.82	15.377		
1,600.00	1,596.26	1,582.01	1,566.36	5.29	5.70	116.63	-131.00	75.87	172.04	161.56	10.49	16.408		
1,700.00	1,695.93	1,679.76	1,662.47	5.64	6.13	117.13	-148.31	80.19	193.04	181.89	11.15	17.312		
1,800.00	1,795.61	1,777.52	1,758.59	5.99	6.55	117.53	-165.62	84.51	214.05	202.23	11.82	18.108		
1,900.00	1,895.28	1,875.28	1,854.71	6.34	6.97	117.86	-182.93	88.84	235.06	222.57	12.49	18.815		
2,000.00	1,994.96	1,973.04	1,950.82	6.70	7.40	118.14	-200.24	93.16	256.08	242.91	13.17	19.446		
2,100.00	2,094.63	2,070.80	2,046.94	7.05	7.82	118.37	-217.55	97.48	277.11	263.26	13.85	20.013		
2,200.00	2,194.30	2,168.56	2,143.06	7.40	8.25	118.57	-234.86	101.81	298.14	283.61	14.53	20.524		
2,300.00	2,293.98	2,266.32	2,239.18	7.75	8.68	118.75	-252.17	106.13	319.17	303.96	15.21	20.987		
2,400.00	2,393.65	2,364.08	2,335.29	8.11	9.10	118.90	-269.48	110.46	340.21	324.31	15.89	21.409		
2,500.00	2,493.32	2,461.83	2,431.41	8.46	9.53	119.03	-286.79	114.78	361.24	344.67	16.57	21.795		
2,600.00	2,593.00	2,559.59	2,527.53	8.81	9.96	119.15	-304.10	119.10	382.28	365.02	17.26	22.149		
2,700.00	2,692.67	2,657.35	2,623.64	9.16	10.39	119.26	-321.41	123.43	403.32	385.38	17.95	22.475		
2,800.00	2,792.34	2,755.11	2,719.76	9.52	10.81	119.36	-338.72	127.75	424.36	405.73	18.63	22.775		
2,900.00	2,892.02	2,852.87	2,815.88	9.87	11.24	119.44	-356.03	132.08	445.41	426.09	19.32	23.054		
3,000.00	2,991.69	2,950.63	2,911.99	10.22	11.67	119.52	-373.34	136.40	466.45	446.44	20.01	23.313		
3,100.00	3,091.37	3,048.39	3,008.11	10.57	12.10	119.60	-390.65	140.72	487.49	466.80	20.70	23.553		
3,200.00	3,191.04	3,146.15	3,104.23	10.93	12.53	119.66	-407.96	145.05	508.54	487.15	21.39	23.778		
3,300.00	3,290.71	3,243.90	3,200.34	11.28	12.96	119.73	-425.27	149.37	529.58	507.51	22.08	23.988		
3,400.00	3,390.39	3,341.66	3,296.46	11.63	13.39	119.78	-442.58	153.69	550.63	527.86	22.77	24.185		
3,500.00	3,490.06	3,439.42	3,392.58	11.98	13.81	119.84	-459.89	158.02	571.68	548.22	23.46	24.370		
3,600.00	3,589.73	3,537.18	3,488.69	12.34	14.24	119.88	-477.20	162.34	592.72	568.57	24.15	24.544		
3,700.00	3,689.41	3,634.94	3,584.81	12.69	14.67	119.93	-494.51	166.67	613.77	588.93	24.84	24.708		
3,800.00	3,789.08	3,732.70	3,680.93	13.04	15.10	119.97	-511.82	170.99	634.82	609.29	25.53	24.862		
3,900.00	3,888.76	3,830.46	3,777.05	13.39	15.53	120.01	-529.13	175.31	655.87	629.64	26.23	25.009		
4,000.00	3,988.43	3,928.22	3,873.16	13.75	15.96	120.05	-546.44	179.64	676.92	650.00	26.92	25.147		
4,100.00	4,088.10	4,025.98	3,969.28	14.10	16.39	120.08	-563.75	183.96	697.97	670.35	27.61	25.279		
4,200.00	4,187.78	4,123.73	4,065.40	14.45	16.82	120.12	-581.06	188.29	719.01	690.71	28.30	25.403		
4,300.00	4,287.45	4,221.49	4,161.51	14.81	17.25	120.15	-598.37	192.61	740.06	711.07	29.00	25.522		
4,400.00	4,387.12	4,319.25	4,257.63	15.16	17.68	120.18	-615.68	196.93	761.11	731.42	29.69	25.635		
4,500.00	4,486.80	4,417.01	4,353.75	15.51	18.11	120.21	-632.99	201.26	782.16	751.78	30.38	25.742		
4,599.99	4,586.46	4,514.76	4,449.85	15.86	18.54	120.23	-650.29	205.58	803.21	772.13	31.08	25.845		
4,700.00	4,686.27	4,633.16	4,566.44	16.17	18.96	120.29	-670.29	210.57	822.69	790.87	31.82	25.851		
4,800.00	4,786.22	4,768.83	4,700.89	16.42	19.31	120.51	-687.76	214.94	836.50	803.98	32.52	25.719		
4,900.00	4,886.22	4,906.08	4,837.63	16.70	19.65	-173.14	-699.14	217.78	844.57	811.38	33.19	25.446		
5,000.00	4,986.22	6,422.36	5,735.00	17.01	21.22	-90.00	138.00	219.10	755.34	744.09	11.25	67.117		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,100.00	5,086.02	6,417.76	5,735.00	17.29	21.20	130.87	133.41	219.10	656.54	644.83	11.71	56.045		
5,200.00	5,183.26	6,395.12	5,735.00	17.55	21.11	150.56	110.76	219.10	560.61	548.37	12.24	45.810		
5,300.00	5,274.40	6,354.33	5,735.00	17.81	20.99	156.41	69.98	219.10	471.19	458.27	12.93	36.455		
5,400.00	5,356.08	6,296.91	5,735.00	18.06	20.81	158.06	12.56	219.10	391.73	377.82	13.91	28.163		
5,500.00	5,425.31	6,224.96	5,735.00	18.31	20.67	157.74	-59.39	219.10	325.23	309.93	15.30	21.256		
5,600.00	5,479.55	6,141.13	5,735.00	18.57	20.56	156.34	-143.23	219.10	274.09	257.05	17.04	16.083		
5,700.00	5,516.79	6,011.58	5,727.35	18.87	20.51	152.60	-272.34	219.10	235.66	216.15	19.51	12.077		
5,800.00	5,535.68	5,872.96	5,685.91	19.24	20.57	145.20	-404.19	219.10	193.34	167.72	25.61	7.549		
5,900.00	5,538.00	5,758.12	5,626.22	19.68	20.65	131.60	-502.02	219.10	149.34	116.65	32.70	4.568		
6,000.00	5,538.00	5,671.35	5,567.70	20.21	20.72	106.64	-565.96	219.10	108.56	68.96	39.60	2.742		
6,057.58	5,538.00	5,632.22	5,538.00	20.57	20.74	90.00	-591.41	219.10	99.35	58.73	40.62	2.446 SF		
6,100.00	5,538.00	5,607.44	5,518.23	20.84	20.75	78.75	-606.36	219.10	104.96	66.40	38.56	2.722		
6,200.00	5,538.00	5,559.74	5,478.29	21.55	20.76	58.99	-632.40	219.10	154.03	120.99	33.03	4.663		
6,300.00	5,538.00	5,523.34	5,446.30	22.34	20.76	47.29	-649.76	219.10	228.39	196.63	31.77	7.190		
6,400.00	5,538.00	5,500.00	5,425.18	23.19	20.75	41.37	-659.69	219.10	312.65	280.40	32.26	9.693		
6,500.00	5,538.00	5,472.21	5,399.49	24.11	20.74	35.65	-670.28	219.10	401.54	369.05	32.49	12.358		
6,600.00	5,538.00	5,450.00	5,378.57	25.08	20.73	31.93	-677.74	219.10	493.27	460.41	32.85	15.014		
6,700.00	5,538.00	5,450.00	5,378.57	26.10	20.73	31.93	-677.74	219.10	586.97	553.33	33.64	17.450		
6,800.00	5,538.00	5,425.59	5,355.24	27.16	20.71	28.53	-684.90	219.10	681.46	647.75	33.71	20.214		
6,900.00	5,538.00	5,400.00	5,330.45	28.25	20.69	25.58	-691.23	219.10	777.44	743.68	33.76	23.031		
7,000.00	5,538.00	5,400.00	5,330.45	29.38	20.69	25.58	-691.23	219.10	873.46	839.29	34.17	25.562		
7,100.00	5,538.00	5,400.00	5,330.45	30.54	20.69	25.58	-691.23	219.10	970.28	935.79	34.49	28.130		
7,200.00	5,538.00	5,400.00	5,330.45	31.73	20.69	25.58	-691.23	219.10	1,067.69	1,032.94	34.75	30.723		
7,300.00	5,538.00	5,400.00	5,330.45	32.93	20.69	25.58	-691.23	219.10	1,165.54	1,130.58	34.97	33.332		
7,400.00	5,538.00	5,377.92	5,308.83	34.16	20.66	23.44	-695.71	219.10	1,263.07	1,228.11	34.96	36.131		
7,500.00	5,538.00	5,372.87	5,303.86	35.41	20.65	22.99	-696.61	219.10	1,361.20	1,326.11	35.10	38.785		
7,600.00	5,538.00	5,350.00	5,281.25	36.67	20.62	21.15	-700.05	219.10	1,459.97	1,424.89	35.08	41.615		

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





# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	90.02	-0.02	59.98	59.98					
100.00	100.00	100.00	100.00	0.13	0.13	90.02	-0.02	59.98	59.98	59.71	0.27	225.188		
200.00	200.00	200.00	200.00	0.47	0.47	90.02	-0.02	59.98	59.98	59.04	0.94	63.763		
300.00	300.00	300.00	300.00	0.81	0.81	90.02	-0.02	59.98	59.98	58.36	1.61	37.140 CC		
400.00	399.98	398.00	397.98	1.14	1.13	23.73	0.36	61.61	60.04	57.73	2.32	25.930		
500.00	499.84	496.00	495.84	1.47	1.45	24.59	1.49	66.51	60.25	57.19	3.06	19.690 ES		
600.00	599.52	593.98	593.46	1.81	1.79	25.69	3.38	74.66	61.36	57.54	3.82	16.044		
700.00	699.20	691.80	690.58	2.15	2.13	25.98	6.01	86.04	65.63	61.03	4.60	14.267		
800.00	798.87	791.14	788.91	2.49	2.49	25.74	9.20	99.84	72.14	66.90	5.24	13.772		
900.00	898.55	890.93	887.66	2.84	2.86	25.52	12.42	113.77	78.71	72.86	5.86	13.443		
1,000.00	998.22	990.71	986.42	3.19	3.24	25.34	15.63	127.70	85.29	78.81	6.49	13.151		
1,100.00	1,097.89	1,090.49	1,085.17	3.53	3.61	25.19	18.85	141.62	91.88	84.75	7.12	12.896		
1,200.00	1,197.57	1,190.27	1,183.92	3.88	4.00	25.05	22.07	155.55	98.46	90.69	7.77	12.670		
1,300.00	1,297.24	1,290.06	1,282.68	4.24	4.38	24.93	25.29	169.48	105.04	96.62	8.42	12.471		
1,400.00	1,396.91	1,389.84	1,381.43	4.59	4.76	24.83	28.51	183.40	111.62	102.54	9.08	12.295		
1,500.00	1,496.59	1,489.62	1,480.18	4.94	5.15	24.73	31.73	197.33	118.20	108.47	9.74	12.139		
1,600.00	1,596.26	1,589.41	1,578.94	5.29	5.54	24.65	34.95	211.26	124.79	114.39	10.40	11.999		
1,700.00	1,695.93	1,689.19	1,677.69	5.64	5.92	24.58	38.17	225.19	131.37	120.31	11.06	11.874		
1,800.00	1,795.61	1,788.97	1,776.45	5.99	6.31	24.51	41.39	239.11	137.95	126.22	11.73	11.761		
1,900.00	1,895.28	1,888.76	1,875.20	6.34	6.70	24.45	44.60	253.04	144.54	132.14	12.40	11.659		
2,000.00	1,994.96	1,988.54	1,973.95	6.70	7.09	24.39	47.82	266.97	151.12	138.05	13.07	11.566		
2,100.00	2,094.63	2,088.32	2,072.71	7.05	7.47	24.34	51.04	280.90	157.70	143.97	13.74	11.481		
2,200.00	2,194.30	2,188.10	2,171.46	7.40	7.86	24.29	54.26	294.82	164.29	149.88	14.41	11.404		
2,300.00	2,293.98	2,287.89	2,270.21	7.75	8.25	24.25	57.48	308.75	170.87	155.79	15.08	11.332		
2,400.00	2,393.65	2,387.67	2,368.97	8.11	8.64	24.21	60.70	322.68	177.45	161.70	15.75	11.267		
2,500.00	2,493.32	2,487.45	2,467.72	8.46	9.03	24.17	63.92	336.61	184.04	167.61	16.42	11.206		
2,600.00	2,593.00	2,587.24	2,566.48	8.81	9.42	24.14	67.14	350.53	190.62	173.52	17.10	11.149		
2,700.00	2,692.67	2,687.02	2,665.23	9.16	9.81	24.10	70.36	364.46	197.21	179.43	17.77	11.097		
2,800.00	2,792.34	2,786.80	2,763.98	9.52	10.20	24.07	73.57	378.39	203.79	185.34	18.45	11.048		
2,900.00	2,892.02	2,886.59	2,862.74	9.87	10.59	24.04	76.79	392.32	210.37	191.25	19.12	11.002		
3,000.00	2,991.69	2,986.37	2,961.49	10.22	10.97	24.02	80.01	406.24	216.96	197.16	19.80	10.960		
3,100.00	3,091.37	3,086.15	3,060.24	10.57	11.36	23.99	83.23	420.17	223.54	203.07	20.47	10.919		
3,200.00	3,191.04	3,185.93	3,159.00	10.93	11.75	23.97	86.45	434.10	230.13	208.98	21.15	10.882		
3,300.00	3,290.71	3,285.72	3,257.75	11.28	12.14	23.95	89.67	448.02	236.71	214.89	21.82	10.846		
3,400.00	3,390.39	3,385.50	3,356.51	11.63	12.53	23.92	92.89	461.95	243.30	220.80	22.50	10.813		
3,500.00	3,490.06	3,485.28	3,455.26	11.98	12.92	23.90	96.11	475.88	249.88	226.70	23.18	10.781		
3,600.00	3,589.73	3,585.07	3,554.01	12.34	13.31	23.89	99.33	489.81	256.47	232.61	23.85	10.751		
3,700.00	3,689.41	3,684.85	3,652.77	12.69	13.70	23.87	102.54	503.73	263.05	238.52	24.53	10.723		
3,800.00	3,789.08	3,784.63	3,751.52	13.04	14.09	23.85	105.76	517.66	269.63	244.43	25.21	10.696		
3,900.00	3,888.76	3,884.41	3,850.27	13.39	14.48	23.83	108.98	531.59	276.22	250.33	25.89	10.671		
4,000.00	3,988.43	3,984.20	3,949.03	13.75	14.87	23.82	112.20	545.52	282.80	256.24	26.56	10.646		
4,100.00	4,088.10	4,083.98	4,047.78	14.10	15.26	23.80	115.42	559.44	289.39	262.15	27.24	10.623		
4,200.00	4,187.78	4,183.76	4,146.54	14.45	15.65	23.79	118.64	573.37	295.97	268.05	27.92	10.601		
4,300.00	4,287.45	4,283.55	4,245.29	14.81	16.04	23.78	121.86	587.30	302.56	273.96	28.60	10.580		
4,400.00	4,387.12	4,383.33	4,344.04	15.16	16.43	23.76	125.08	601.23	309.14	279.87	29.28	10.560		
4,500.00	4,486.80	4,483.11	4,442.80	15.51	16.82	23.75	128.30	615.15	315.73	285.77	29.95	10.541		
4,599.99	4,586.46	4,591.18	4,549.89	15.86	17.20	23.78	131.56	629.27	321.44	290.79	30.65	10.487		
4,700.00	4,686.27	4,703.44	4,661.61	16.17	17.51	23.86	134.02	639.93	325.17	293.91	31.25	10.405		
4,800.00	4,786.22	4,815.87	4,773.83	16.42	17.80	23.85	135.50	646.33	328.27	296.51	31.76	10.336		
4,900.00	4,886.22	4,928.28	4,886.22	16.70	18.08	90.35	135.99	648.43	329.98	297.73	32.25	10.231		
5,000.00	4,986.22	5,028.28	4,986.22	17.01	18.35	90.35	135.99	648.43	329.98	297.12	32.86	10.042		
5,055.08	5,041.25	5,083.31	5,041.25	17.16	18.50	-90.00	135.99	648.43	329.98	296.80	33.18	9.945		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,100.00	5,086.02	5,128.09	5,086.02	17.29	18.63	-90.44	135.98	648.43	329.99	296.55	33.44	9.869		
5,200.00	5,183.26	5,229.00	5,186.29	17.55	18.88	-92.68	126.04	648.43	330.35	296.44	33.91	9.742		
5,300.00	5,274.40	5,332.57	5,285.22	17.81	19.14	-94.84	95.98	648.43	331.18	296.87	34.31	9.653		
5,400.00	5,356.08	5,438.85	5,378.51	18.06	19.38	-96.84	45.44	648.43	332.37	297.73	34.64	9.594		
5,500.00	5,425.31	5,547.75	5,461.44	18.31	19.63	-98.58	-24.83	648.43	333.74	298.80	34.94	9.551		
5,600.00	5,479.55	5,659.00	5,529.22	18.57	19.89	-99.99	-112.78	648.43	335.08	299.84	35.25	9.507		
5,700.00	5,516.79	5,772.17	5,577.45	18.87	20.19	-100.99	-214.91	648.43	336.16	300.53	35.63	9.436		
5,800.00	5,535.68	5,886.62	5,602.68	19.24	20.57	-101.55	-326.31	648.43	336.80	300.63	36.17	9.312		
5,900.00	5,538.00	5,994.27	5,606.00	19.68	21.01	-101.64	-433.84	648.43	336.91	299.92	36.99	9.109		
6,000.00	5,538.00	6,094.27	5,606.00	20.21	21.50	-101.64	-533.84	648.43	336.91	298.82	38.09	8.844		
6,100.00	5,538.00	6,194.27	5,606.00	20.84	22.09	-101.64	-633.84	648.43	336.91	297.53	39.38	8.556		
6,200.00	5,538.00	6,294.27	5,606.00	21.55	22.77	-101.64	-733.84	648.43	336.91	296.08	40.83	8.252		
6,300.00	5,538.00	6,394.27	5,606.00	22.34	23.51	-101.64	-833.84	648.43	336.91	294.49	42.43	7.941		
6,400.00	5,538.00	6,494.27	5,606.00	23.19	24.33	-101.64	-933.84	648.43	336.91	292.76	44.15	7.630		
6,500.00	5,538.00	6,594.27	5,606.00	24.11	25.21	-101.64	-1,033.84	648.43	336.91	290.91	46.00	7.324		
6,600.00	5,538.00	6,694.27	5,606.00	25.08	26.14	-101.64	-1,133.84	648.43	336.91	288.96	47.95	7.027		
6,700.00	5,538.00	6,794.27	5,606.00	26.10	27.12	-101.64	-1,233.84	648.43	336.91	286.93	49.99	6.740		
6,800.00	5,538.00	6,894.27	5,606.00	27.16	28.14	-101.64	-1,333.84	648.43	336.91	284.80	52.11	6.466		
6,900.00	5,538.00	6,994.27	5,606.00	28.25	29.21	-101.64	-1,433.84	648.43	336.91	282.61	54.30	6.205		
7,000.00	5,538.00	7,094.27	5,606.00	29.38	30.30	-101.64	-1,533.84	648.43	336.91	280.36	56.55	5.957		
7,100.00	5,538.00	7,194.27	5,606.00	30.54	31.43	-101.64	-1,633.84	648.43	336.91	278.05	58.86	5.724		
7,200.00	5,538.00	7,294.27	5,606.00	31.73	32.59	-101.64	-1,733.84	648.43	336.91	275.69	61.22	5.503		
7,300.00	5,538.00	7,394.27	5,606.00	32.93	33.77	-101.64	-1,833.84	648.43	336.91	273.29	63.63	5.295		
7,400.00	5,538.00	7,494.27	5,606.00	34.16	34.97	-101.64	-1,933.84	648.43	336.92	270.85	66.07	5.100		
7,500.00	5,538.00	7,594.27	5,606.00	35.41	36.20	-101.64	-2,033.84	648.43	336.92	268.37	68.54	4.915		
7,600.00	5,538.00	7,694.27	5,606.00	36.67	37.44	-101.64	-2,133.84	648.43	336.92	265.86	71.05	4.742		
7,700.00	5,538.00	7,794.27	5,606.00	37.95	38.70	-101.64	-2,233.84	648.43	336.92	263.33	73.59	4.578		
7,800.00	5,538.00	7,894.27	5,606.00	39.25	39.97	-101.64	-2,333.84	648.43	336.92	260.77	76.15	4.424		
7,900.00	5,538.00	7,994.27	5,606.00	40.55	41.26	-101.64	-2,433.84	648.43	336.92	258.18	78.73	4.279		
8,000.00	5,538.00	8,094.27	5,606.00	41.87	42.55	-101.64	-2,533.84	648.43	336.92	255.58	81.34	4.142		
8,100.00	5,538.00	8,194.27	5,606.00	43.19	43.86	-101.64	-2,633.84	648.43	336.92	252.96	83.96	4.013		
8,200.00	5,538.00	8,294.27	5,606.00	44.53	45.18	-101.64	-2,733.84	648.43	336.92	250.32	86.60	3.890		
8,300.00	5,538.00	8,394.27	5,606.00	45.87	46.51	-101.64	-2,833.84	648.43	336.92	247.66	89.26	3.775		
8,400.00	5,538.00	8,494.27	5,606.00	47.22	47.85	-101.64	-2,933.84	648.43	336.92	244.99	91.93	3.665		
8,500.00	5,538.00	8,594.27	5,606.00	48.58	49.19	-101.64	-3,033.84	648.43	336.92	242.31	94.61	3.561		
8,600.00	5,538.00	8,694.27	5,606.00	49.95	50.54	-101.64	-3,133.84	648.43	336.92	239.61	97.30	3.463		
8,700.00	5,538.00	8,794.27	5,606.00	51.32	51.90	-101.64	-3,233.84	648.43	336.92	236.91	100.01	3.369		
8,800.00	5,538.00	8,894.27	5,606.00	52.69	53.26	-101.64	-3,333.84	648.43	336.92	234.19	102.72	3.280		
8,900.00	5,538.00	8,994.27	5,606.00	54.07	54.63	-101.64	-3,433.84	648.44	336.92	231.47	105.45	3.195		
9,000.00	5,538.00	9,094.27	5,606.00	55.46	56.01	-101.64	-3,533.84	648.44	336.92	228.74	108.18	3.114		
9,100.00	5,538.00	9,194.27	5,606.00	56.85	57.39	-101.64	-3,633.84	648.44	336.92	226.00	110.92	3.037		
9,200.00	5,538.00	9,294.27	5,606.00	58.24	58.77	-101.64	-3,733.84	648.44	336.92	223.25	113.67	2.964		
9,300.00	5,538.00	9,394.27	5,606.00	59.64	60.16	-101.64	-3,833.84	648.44	336.92	220.49	116.43	2.894		
9,400.00	5,538.00	9,494.27	5,606.00	61.04	61.55	-101.64	-3,933.84	648.44	336.92	217.73	119.19	2.827		
9,500.00	5,538.00	9,594.27	5,606.00	62.45	62.95	-101.64	-4,033.84	648.44	336.92	214.96	121.96	2.763		
9,600.00	5,538.00	9,694.27	5,606.00	63.86	64.35	-101.64	-4,133.84	648.44	336.92	212.19	124.73	2.701		
9,700.00	5,538.00	9,794.27	5,606.00	65.27	65.75	-101.64	-4,233.84	648.44	336.92	209.41	127.51	2.642		
9,800.00	5,538.00	9,894.27	5,606.00	66.68	67.16	-101.64	-4,333.84	648.44	336.92	206.63	130.29	2.586		
9,900.00	5,538.00	9,994.27	5,606.00	68.09	68.56	-101.64	-4,433.84	648.44	336.92	203.84	133.08	2.532		
10,000.00	5,538.00	10,094.27	5,606.00	69.51	69.97	-101.64	-4,533.84	648.44	336.92	201.05	135.87	2.480		
10,100.00	5,538.00	10,194.27	5,606.00	70.93	71.39	-101.64	-4,633.84	648.44	336.92	198.25	138.67	2.430		
10,200.00	5,538.00	10,294.27	5,606.00	72.35	72.80	-101.64	-4,733.84	648.44	336.92	195.45	141.47	2.382		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference				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		
10,300.00	5,538.00	10,394.27	5,606.00	73.78	74.22	-101.64	-4,833.84	648.44	336.92	192.65	144.27	2.335		
10,400.00	5,538.00	10,494.27	5,606.00	75.20	75.64	-101.64	-4,933.84	648.44	336.92	189.84	147.08	2.291		
10,500.00	5,538.00	10,594.27	5,606.00	76.63	77.06	-101.64	-5,033.84	648.44	336.92	187.03	149.88	2.248		
10,600.00	5,538.00	10,694.27	5,606.00	78.06	78.49	-101.64	-5,133.84	648.44	336.92	184.22	152.70	2.206		
10,700.00	5,538.00	10,794.27	5,606.00	79.49	79.91	-101.64	-5,233.84	648.44	336.92	181.41	155.51	2.167		
10,800.00	5,538.00	10,894.27	5,606.00	80.92	81.34	-101.64	-5,333.84	648.44	336.92	178.59	158.33	2.128		
10,900.00	5,538.00	10,994.27	5,606.00	82.36	82.77	-101.64	-5,433.84	648.44	336.92	175.77	161.15	2.091		
11,000.00	5,538.00	11,094.27	5,606.00	83.79	84.20	-101.64	-5,533.84	648.44	336.92	172.95	163.98	2.055		
11,100.00	5,538.00	11,194.27	5,606.00	85.23	85.63	-101.64	-5,633.84	648.44	336.92	170.12	166.80	2.020		
11,200.00	5,538.00	11,294.27	5,606.00	86.67	87.06	-101.64	-5,733.84	648.44	336.92	167.29	169.63	1.986		
11,300.00	5,538.00	11,394.27	5,606.00	88.11	88.50	-101.64	-5,833.84	648.44	336.92	164.46	172.46	1.954		
11,400.00	5,538.00	11,494.27	5,606.00	89.55	89.93	-101.64	-5,933.84	648.44	336.92	161.63	175.29	1.922		
11,500.00	5,538.00	11,594.27	5,606.00	90.99	91.37	-101.64	-6,033.84	648.44	336.92	158.80	178.12	1.892		
11,600.00	5,538.00	11,694.27	5,606.00	92.43	92.80	-101.64	-6,133.84	648.44	336.92	155.96	180.96	1.862		
11,700.00	5,538.00	11,794.27	5,606.00	93.87	94.24	-101.64	-6,233.84	648.44	336.92	153.13	183.80	1.833		
11,800.00	5,538.00	11,894.27	5,606.00	95.31	95.68	-101.64	-6,333.84	648.44	336.92	150.29	186.63	1.805		
11,900.00	5,538.00	11,994.27	5,606.00	96.76	97.12	-101.64	-6,433.84	648.44	336.92	147.45	189.47	1.778		
12,000.00	5,538.00	12,094.27	5,606.00	98.20	98.57	-101.64	-6,533.84	648.44	336.92	144.61	192.32	1.752		
12,100.00	5,538.00	12,194.27	5,606.00	99.65	100.01	-101.64	-6,633.84	648.44	336.92	141.76	195.16	1.726		
12,200.00	5,538.00	12,294.27	5,606.00	101.10	101.45	-101.64	-6,733.84	648.44	336.92	138.92	198.00	1.702		
12,300.00	5,538.00	12,394.27	5,606.00	102.54	102.89	-101.64	-6,833.84	648.44	336.92	136.07	200.85	1.677		
12,400.00	5,538.00	12,494.27	5,606.00	103.99	104.34	-101.64	-6,933.84	648.44	336.92	133.23	203.70	1.654		
12,500.00	5,538.00	12,594.27	5,606.00	105.44	105.79	-101.64	-7,033.84	648.44	336.92	130.38	206.54	1.631		
12,600.00	5,538.00	12,694.27	5,606.00	106.89	107.23	-101.64	-7,133.84	648.44	336.92	127.53	209.39	1.609		
12,700.00	5,538.00	12,794.27	5,606.00	108.34	108.68	-101.64	-7,233.84	648.44	336.92	124.68	212.24	1.587		
12,800.00	5,538.00	12,894.27	5,606.00	109.79	110.13	-101.64	-7,333.84	648.44	336.92	121.83	215.09	1.566		
12,900.00	5,538.00	12,994.27	5,606.00	111.24	111.57	-101.64	-7,433.84	648.44	336.92	118.98	217.95	1.546		
13,000.00	5,538.00	13,094.27	5,606.00	112.69	113.02	-101.64	-7,533.84	648.44	336.92	116.12	220.80	1.526		
13,100.00	5,538.00	13,194.27	5,606.00	114.14	114.47	-101.64	-7,633.84	648.44	336.92	113.27	223.65	1.506		
13,200.00	5,538.00	13,294.27	5,606.00	115.60	115.92	-101.64	-7,733.84	648.44	336.92	110.41	226.51	1.487 Level 3		
13,300.00	5,538.00	13,394.27	5,606.00	117.05	117.37	-101.64	-7,833.84	648.44	336.92	107.56	229.37	1.469 Level 3		
13,400.00	5,538.00	13,494.27	5,606.00	118.50	118.82	-101.64	-7,933.84	648.44	336.92	104.70	232.22	1.451 Level 3		
13,500.00	5,538.00	13,594.27	5,606.00	119.96	120.28	-101.64	-8,033.84	648.44	336.92	101.84	235.08	1.433 Level 3		
13,600.00	5,538.00	13,694.27	5,606.00	121.41	121.73	-101.64	-8,133.84	648.44	336.92	98.99	237.94	1.416 Level 3		
13,604.91	5,538.00	13,699.18	5,606.00	121.48	121.80	-101.64	-8,138.75	648.44	336.92	98.85	238.07	1.415 Level 3		
13,650.59	5,538.00	13,742.83	5,606.00	122.08	122.43	-101.64	-8,182.40	648.44	336.93	97.58	239.35	1.408 Level 3, SF		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-29.99	29.99					
100.00	100.00	100.00	100.00	0.13	0.13	-90.00	0.00	-29.99	29.99	29.72	0.27	112.594		
200.00	200.00	200.00	200.00	0.47	0.47	-90.00	0.00	-29.99	29.99	29.05	0.94	31.882		
300.00	300.00	300.00	300.00	0.81	0.81	-90.00	0.00	-29.99	29.99	28.37	1.61	18.570 CC		
400.00	399.98	400.81	400.79	1.14	1.14	-155.77	1.12	-28.62	30.23	27.92	2.31	13.080 ES		
500.00	499.84	501.07	500.95	1.47	1.48	-154.39	3.98	-25.12	31.57	28.59	2.97	10.613		
600.00	599.52	601.01	600.77	1.81	1.81	-154.87	6.95	-21.48	35.17	31.54	3.63	9.694		
700.00	699.20	700.94	700.59	2.15	2.15	-155.38	9.93	-17.85	38.94	34.65	4.28	9.089		
800.00	798.87	800.86	800.41	2.49	2.48	-155.80	12.90	-14.21	42.70	37.76	4.95	8.636		
900.00	898.55	900.79	900.23	2.84	2.82	-156.16	15.88	-10.57	46.47	40.86	5.61	8.285		
1,000.00	998.22	1,000.72	1,000.05	3.19	3.16	-156.46	18.85	-6.93	50.24	43.97	6.28	8.006		
1,100.00	1,097.89	1,100.65	1,099.86	3.53	3.50	-156.71	21.83	-3.29	54.02	47.07	6.94	7.779		
1,200.00	1,197.57	1,200.58	1,199.68	3.88	3.84	-156.94	24.80	0.34	57.79	50.18	7.61	7.590		
1,300.00	1,297.24	1,300.51	1,299.50	4.24	4.18	-157.13	27.78	3.98	61.56	53.28	8.28	7.432		
1,400.00	1,396.91	1,400.44	1,399.32	4.59	4.52	-157.31	30.75	7.62	65.34	56.38	8.95	7.296		
1,500.00	1,496.59	1,500.36	1,499.14	4.94	4.86	-157.46	33.73	11.26	69.11	59.48	9.63	7.179		
1,600.00	1,596.26	1,600.29	1,598.95	5.29	5.20	-157.60	36.70	14.90	72.89	62.59	10.30	7.078		
1,700.00	1,695.93	1,700.22	1,698.77	5.64	5.54	-157.73	39.68	18.53	76.66	65.69	10.97	6.988		
1,800.00	1,795.61	1,800.15	1,798.59	5.99	5.88	-157.84	42.65	22.17	80.44	68.79	11.64	6.908		
1,900.00	1,895.28	1,900.08	1,898.41	6.34	6.22	-157.94	45.63	25.81	84.21	71.90	12.32	6.838		
2,000.00	1,994.96	2,000.01	1,998.23	6.70	6.56	-158.04	48.60	29.45	87.99	75.00	12.99	6.774		
2,100.00	2,094.63	2,099.94	2,098.04	7.05	6.90	-158.12	51.58	33.09	91.77	78.10	13.66	6.717		
2,200.00	2,194.30	2,199.86	2,197.86	7.40	7.24	-158.20	54.55	36.72	95.54	81.21	14.34	6.665		
2,300.00	2,293.98	2,299.79	2,297.68	7.75	7.58	-158.28	57.53	40.36	99.32	84.31	15.01	6.617		
2,400.00	2,393.65	2,399.72	2,397.50	8.11	7.92	-158.35	60.50	44.00	103.10	87.41	15.68	6.574		
2,500.00	2,493.32	2,499.65	2,497.32	8.46	8.26	-158.41	63.47	47.64	106.87	90.52	16.36	6.534		
2,600.00	2,593.00	2,599.58	2,597.13	8.81	8.60	-158.47	66.45	51.28	110.65	93.62	17.03	6.497		
2,700.00	2,692.67	2,699.51	2,696.95	9.16	8.94	-158.52	69.42	54.91	114.43	96.72	17.71	6.463		
2,800.00	2,792.34	2,799.44	2,796.77	9.52	9.28	-158.57	72.40	58.55	118.21	99.83	18.38	6.432		
2,900.00	2,892.02	2,899.36	2,896.59	9.87	9.62	-158.62	75.37	62.19	121.98	102.93	19.05	6.402		
3,000.00	2,991.69	2,999.29	2,996.41	10.22	9.96	-158.67	78.35	65.83	125.76	106.03	19.73	6.375		
3,100.00	3,091.37	3,099.22	3,096.22	10.57	10.30	-158.71	81.32	69.46	129.54	109.14	20.40	6.349		
3,200.00	3,191.04	3,199.15	3,196.04	10.93	10.64	-158.75	84.30	73.10	133.32	112.24	21.08	6.326		
3,300.00	3,290.71	3,299.08	3,295.86	11.28	10.98	-158.79	87.27	76.74	137.10	115.35	21.75	6.303		
3,400.00	3,390.39	3,399.01	3,395.68	11.63	11.33	-158.83	90.25	80.38	140.87	118.45	22.42	6.282		
3,500.00	3,490.06	3,498.94	3,495.50	11.98	11.67	-158.86	93.22	84.02	144.65	121.55	23.10	6.262		
3,600.00	3,589.73	3,598.86	3,595.31	12.34	12.01	-158.89	96.20	87.65	148.43	124.66	23.77	6.243		
3,700.00	3,689.41	3,698.79	3,695.13	12.69	12.35	-158.92	99.17	91.29	152.21	127.76	24.45	6.226		
3,800.00	3,789.08	3,798.72	3,794.95	13.04	12.69	-158.95	102.15	94.93	155.99	130.86	25.12	6.209		
3,900.00	3,888.76	3,898.65	3,894.77	13.39	13.03	-158.98	105.12	98.57	159.76	133.97	25.80	6.193		
4,000.00	3,988.43	3,998.58	3,994.59	13.75	13.37	-159.01	108.10	102.21	163.54	137.07	26.47	6.178		
4,100.00	4,088.10	4,098.51	4,094.40	14.10	13.71	-159.03	111.07	105.84	167.32	140.17	27.15	6.164		
4,200.00	4,187.78	4,198.44	4,194.22	14.45	14.05	-159.06	114.04	109.48	171.10	143.28	27.82	6.150		
4,300.00	4,287.45	4,298.36	4,294.04	14.81	14.39	-159.08	117.02	113.12	174.88	146.38	28.50	6.137		
4,400.00	4,387.12	4,398.29	4,393.86	15.16	14.73	-159.10	119.99	116.76	178.66	149.49	29.17	6.125		
4,500.00	4,486.80	4,498.22	4,493.68	15.51	15.07	-159.13	122.97	120.40	182.43	152.59	29.84	6.113		
4,599.99	4,586.46	4,598.14	4,593.49	15.86	15.41	-159.15	125.94	124.03	186.21	155.69	30.52	6.102		
4,700.00	4,686.27	4,698.12	4,693.35	16.17	15.75	-159.99	128.92	127.67	188.34	157.18	31.15	6.045		
4,800.00	4,786.22	4,798.09	4,793.22	16.42	16.09	-158.43	131.90	131.31	187.21	155.46	31.75	5.896		
4,900.00	4,886.22	4,897.99	4,893.00	16.70	16.44	-90.98	134.87	134.95	183.65	151.27	32.38	5.672		
5,000.00	4,986.22	4,996.55	4,991.46	17.01	16.76	-90.09	137.72	138.44	180.09	147.08	33.01	5.455		
5,097.57	5,083.52	5,089.32	5,084.21	17.28	17.00	92.35	138.98	139.97	178.63	145.11	33.52	5.329		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,100.00	5,086.02	5,091.72	5,086.60	17.29	17.01	91.80	138.98	139.98	178.56	145.03	33.53	5.325		
5,200.00	5,183.26	5,188.38	5,183.26	17.55	17.29	98.53	139.00	140.00	180.67	146.58	34.09	5.300		
5,300.00	5,274.40	5,279.52	5,274.40	17.81	17.58	108.59	139.00	140.00	191.33	156.65	34.68	5.517		
5,400.00	5,356.08	5,379.03	5,373.65	18.06	17.87	120.08	133.62	140.01	216.35	181.14	35.21	6.145		
5,500.00	5,425.31	5,498.71	5,489.10	18.31	18.18	130.23	103.08	140.06	249.58	214.83	34.75	7.182		
5,600.00	5,479.55	5,641.73	5,613.48	18.57	18.55	138.31	33.38	140.18	284.45	252.10	32.35	8.794		
5,700.00	5,516.79	5,815.09	5,731.91	18.87	18.97	144.21	-92.12	140.39	314.08	286.42	27.66	11.354		
5,800.00	5,535.68	6,018.69	5,809.69	19.24	19.53	147.40	-278.87	140.70	331.22	308.16	23.06	14.362		
5,900.00	5,538.00	6,174.63	5,820.00	19.68	20.13	147.81	-434.13	140.95	333.21	310.05	23.16	14.390		
6,000.00	5,538.00	6,274.63	5,820.00	20.21	20.64	147.84	-534.13	141.12	333.12	309.21	23.91	13.934		
6,100.00	5,538.00	6,374.63	5,820.00	20.84	21.24	147.86	-634.13	141.29	333.03	308.27	24.77	13.446		
6,200.00	5,538.00	6,474.63	5,820.00	21.55	21.93	147.89	-734.13	141.45	332.94	307.22	25.73	12.942		
6,300.00	5,538.00	6,574.63	5,820.00	22.34	22.69	147.91	-834.13	141.62	332.86	306.08	26.77	12.433		
6,400.00	5,538.00	6,674.63	5,820.00	23.19	23.52	147.93	-934.13	141.79	332.77	304.87	27.90	11.929		
6,500.00	5,538.00	6,774.63	5,820.00	24.11	24.42	147.96	-1,034.13	141.95	332.68	303.59	29.09	11.438		
6,600.00	5,538.00	6,874.63	5,820.00	25.08	25.36	147.98	-1,134.13	142.12	332.59	302.25	30.34	10.963		
6,700.00	5,538.00	6,974.63	5,820.00	26.10	26.36	148.01	-1,234.13	142.28	332.50	300.86	31.64	10.509		
6,800.00	5,538.00	7,074.63	5,820.00	27.16	27.40	148.03	-1,334.13	142.45	332.42	299.43	32.99	10.077		
6,900.00	5,538.00	7,174.63	5,820.00	28.25	28.47	148.06	-1,434.13	142.62	332.33	297.95	34.38	9.667		
7,000.00	5,538.00	7,274.63	5,820.00	29.38	29.58	148.08	-1,534.13	142.78	332.24	296.44	35.80	9.280		
7,100.00	5,538.00	7,374.63	5,820.00	30.54	30.73	148.10	-1,634.13	142.95	332.15	294.89	37.26	8.915		
7,200.00	5,538.00	7,474.63	5,820.00	31.73	31.90	148.13	-1,734.13	143.12	332.06	293.32	38.74	8.572		
7,300.00	5,538.00	7,574.63	5,820.00	32.93	33.09	148.15	-1,834.13	143.28	331.98	291.73	40.25	8.248		
7,400.00	5,538.00	7,674.63	5,820.00	34.16	34.30	148.18	-1,934.13	143.45	331.89	290.11	41.78	7.945		
7,500.00	5,538.00	7,774.63	5,820.00	35.41	35.54	148.20	-2,034.13	143.61	331.80	288.48	43.32	7.659		
7,600.00	5,538.00	7,874.63	5,820.00	36.67	36.79	148.23	-2,134.13	143.78	331.71	286.83	44.89	7.390		
7,700.00	5,538.00	7,974.63	5,820.00	37.95	38.06	148.25	-2,234.13	143.95	331.63	285.16	46.46	7.137		
7,800.00	5,538.00	8,074.63	5,820.00	39.25	39.34	148.27	-2,334.13	144.11	331.54	283.48	48.06	6.899		
7,900.00	5,538.00	8,174.63	5,820.00	40.55	40.64	148.30	-2,434.13	144.28	331.45	281.79	49.66	6.675		
8,000.00	5,538.00	8,274.63	5,820.00	41.87	41.94	148.32	-2,534.13	144.45	331.36	280.09	51.27	6.463		
8,100.00	5,538.00	8,374.63	5,820.00	43.19	43.26	148.35	-2,634.13	144.61	331.28	278.38	52.90	6.263		
8,200.00	5,538.00	8,474.63	5,820.00	44.53	44.59	148.37	-2,734.12	144.78	331.19	276.66	54.53	6.074		
8,300.00	5,538.00	8,574.63	5,820.00	45.87	45.92	148.40	-2,834.12	144.94	331.10	274.94	56.17	5.895		
8,400.00	5,538.00	8,674.63	5,820.00	47.22	47.27	148.42	-2,934.12	145.11	331.02	273.20	57.81	5.726		
8,500.00	5,538.00	8,774.63	5,820.00	48.58	48.62	148.45	-3,034.12	145.28	330.93	271.47	59.46	5.565		
8,600.00	5,538.00	8,874.63	5,820.00	49.95	49.98	148.47	-3,134.12	145.44	330.84	269.72	61.12	5.413		
8,700.00	5,538.00	8,974.63	5,820.00	51.32	51.34	148.50	-3,234.12	145.61	330.75	267.97	62.78	5.268		
8,800.00	5,538.00	9,074.63	5,820.00	52.69	52.71	148.52	-3,334.12	145.78	330.67	266.22	64.45	5.131		
8,900.00	5,538.00	9,174.63	5,820.00	54.07	54.09	148.54	-3,434.12	145.94	330.58	264.46	66.12	5.000		
9,000.00	5,538.00	9,274.63	5,820.00	55.46	55.47	148.57	-3,534.12	146.11	330.49	262.70	67.79	4.875		
9,100.00	5,538.00	9,374.63	5,820.00	56.85	56.85	148.59	-3,634.12	146.27	330.41	260.94	69.47	4.756		
9,200.00	5,538.00	9,474.63	5,820.00	58.24	58.24	148.62	-3,734.12	146.44	330.32	259.18	71.14	4.643		
9,300.00	5,538.00	9,574.63	5,820.00	59.64	59.64	148.64	-3,834.12	146.61	330.23	257.41	72.83	4.535		
9,400.00	5,538.00	9,674.63	5,820.00	61.04	61.03	148.67	-3,934.12	146.77	330.15	255.64	74.51	4.431		
9,500.00	5,538.00	9,774.63	5,820.00	62.45	62.43	148.69	-4,034.12	146.94	330.06	253.87	76.19	4.332		
9,600.00	5,538.00	9,874.63	5,820.00	63.86	63.84	148.72	-4,134.12	147.11	329.97	252.09	77.88	4.237		
9,700.00	5,538.00	9,974.63	5,820.00	65.27	65.25	148.74	-4,234.12	147.27	329.89	250.32	79.57	4.146		
9,800.00	5,538.00	10,074.63	5,820.00	66.68	66.66	148.77	-4,334.12	147.44	329.80	248.54	81.26	4.059		
9,900.00	5,538.00	10,174.63	5,820.00	68.09	68.07	148.79	-4,434.12	147.60	329.72	246.77	82.95	3.975		
10,000.00	5,538.00	10,274.63	5,820.00	69.51	69.48	148.82	-4,534.12	147.77	329.63	244.99	84.64	3.894		
10,100.00	5,538.00	10,374.63	5,820.00	70.93	70.90	148.84	-4,634.12	147.94	329.54	243.21	86.33	3.817		
10,200.00	5,538.00	10,474.63	5,820.00	72.35	72.32	148.87	-4,734.12	148.10	329.46	241.43	88.03	3.743		

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



**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
10,300.00	5,538.00	10,574.63	5,820.00	73.78	73.74	148.89	-4,834.12	148.27	329.37	239.65	89.72	3.671		
10,400.00	5,538.00	10,674.63	5,820.00	75.20	75.16	148.91	-4,934.12	148.44	329.29	237.87	91.41	3.602		
10,500.00	5,538.00	10,774.63	5,820.00	76.63	76.59	148.94	-5,034.12	148.60	329.20	236.09	93.11	3.536		
10,600.00	5,538.00	10,874.63	5,820.00	78.06	78.02	148.96	-5,134.12	148.77	329.11	234.31	94.80	3.472		
10,700.00	5,538.00	10,974.63	5,820.00	79.49	79.44	148.99	-5,234.12	148.93	329.03	232.53	96.49	3.410		
10,800.00	5,538.00	11,074.63	5,820.00	80.92	80.87	149.01	-5,334.12	149.10	328.94	230.75	98.19	3.350		
10,900.00	5,538.00	11,174.63	5,820.00	82.36	82.31	149.04	-5,434.12	149.27	328.86	228.98	99.88	3.292		
11,000.00	5,538.00	11,274.63	5,820.00	83.79	83.74	149.06	-5,534.12	149.43	328.77	227.20	101.58	3.237		
11,100.00	5,538.00	11,374.63	5,820.00	85.23	85.17	149.09	-5,634.12	149.60	328.69	225.42	103.27	3.183		
11,200.00	5,538.00	11,474.63	5,820.00	86.67	86.61	149.11	-5,734.12	149.77	328.60	223.64	104.96	3.131		
11,300.00	5,538.00	11,574.63	5,820.00	88.11	88.05	149.14	-5,834.12	149.93	328.52	221.86	106.65	3.080		
11,400.00	5,538.00	11,674.63	5,820.00	89.55	89.48	149.16	-5,934.12	150.10	328.43	220.08	108.35	3.031		
11,500.00	5,538.00	11,774.63	5,820.00	90.99	90.92	149.19	-6,034.12	150.27	328.35	218.31	110.04	2.984		
11,600.00	5,538.00	11,874.63	5,820.00	92.43	92.36	149.21	-6,134.12	150.43	328.26	216.53	111.73	2.938		
11,700.00	5,538.00	11,974.63	5,820.00	93.87	93.80	149.24	-6,234.12	150.60	328.18	214.76	113.42	2.893		
11,800.00	5,538.00	12,074.63	5,820.00	95.31	95.25	149.26	-6,334.12	150.76	328.09	212.98	115.11	2.850		
11,900.00	5,538.00	12,174.62	5,820.00	96.76	96.69	149.29	-6,434.11	150.93	328.01	211.21	116.80	2.808		
12,000.00	5,538.00	12,274.62	5,820.00	98.20	98.13	149.31	-6,534.11	151.10	327.92	209.44	118.49	2.768		
12,100.00	5,538.00	12,374.62	5,820.00	99.65	99.58	149.34	-6,634.11	151.26	327.84	207.66	120.17	2.728		
12,200.00	5,538.00	12,474.62	5,820.00	101.10	101.02	149.36	-6,734.11	151.43	327.75	205.89	121.86	2.690		
12,300.00	5,538.00	12,574.62	5,820.00	102.54	102.47	149.39	-6,834.11	151.60	327.67	204.12	123.54	2.652		
12,400.00	5,538.00	12,674.62	5,820.00	103.99	103.92	149.41	-6,934.11	151.76	327.58	202.35	125.23	2.616		
12,500.00	5,538.00	12,774.62	5,820.00	105.44	105.36	149.44	-7,034.11	151.93	327.50	200.59	126.91	2.581		
12,600.00	5,538.00	12,874.62	5,820.00	106.89	106.81	149.46	-7,134.11	152.09	327.41	198.82	128.59	2.546		
12,700.00	5,538.00	12,974.62	5,820.00	108.34	108.26	149.49	-7,234.11	152.26	327.33	197.05	130.28	2.513		
12,800.00	5,538.00	13,074.62	5,820.00	109.79	109.71	149.51	-7,334.11	152.43	327.24	195.29	131.96	2.480		
12,900.00	5,538.00	13,174.62	5,820.00	111.24	111.16	149.54	-7,434.11	152.59	327.16	193.52	133.64	2.448		
13,000.00	5,538.00	13,274.62	5,820.00	112.69	112.61	149.56	-7,534.11	152.76	327.08	191.76	135.31	2.417		
13,100.00	5,538.00	13,374.62	5,820.00	114.14	114.06	149.59	-7,634.11	152.93	326.99	190.00	136.99	2.387		
13,200.00	5,538.00	13,474.62	5,820.00	115.60	115.51	149.61	-7,734.11	153.09	326.91	188.24	138.67	2.357		
13,300.00	5,538.00	13,574.62	5,820.00	117.05	116.97	149.64	-7,834.11	153.26	326.82	186.48	140.34	2.329		
13,400.00	5,538.00	13,674.62	5,820.00	118.50	118.42	149.66	-7,934.11	153.42	326.74	184.72	142.02	2.301		
13,500.00	5,538.00	13,774.62	5,820.00	119.96	119.87	149.69	-8,034.11	153.59	326.66	182.97	143.69	2.273		
13,600.00	5,538.00	13,874.62	5,820.00	121.41	121.33	149.71	-8,134.11	153.76	326.57	181.21	145.36	2.247		
13,650.59	5,538.00	13,925.21	5,820.00	122.08	122.06	149.73	-8,184.70	153.84	326.53	180.42	146.11	2.235 SF		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	90.02	-0.01	29.99	29.99					
100.00	100.00	100.00	100.00	0.13	0.13	90.02	-0.01	29.99	29.99	29.72	0.27	112.594		
200.00	200.00	200.00	200.00	0.47	0.47	90.02	-0.01	29.99	29.99	29.05	0.94	31.882		
300.00	300.00	300.00	300.00	0.81	0.81	90.02	-0.01	29.99	29.99	28.37	1.61	18.570 CC		
400.00	399.98	399.01	398.99	1.14	1.13	23.82	0.48	31.63	30.04	27.72	2.32	12.956		
500.00	499.84	498.01	497.86	1.47	1.46	24.93	1.96	36.54	30.21	27.15	3.06	9.858 ES		
600.00	599.52	597.00	596.47	1.81	1.80	26.08	4.41	44.72	31.26	27.43	3.83	8.160		
700.00	699.20	696.86	695.76	2.15	2.14	26.10	7.47	54.93	34.09	29.63	4.46	7.645		
800.00	798.87	796.82	795.15	2.49	2.49	26.11	10.53	65.17	36.93	31.85	5.09	7.259		
900.00	898.55	896.78	894.53	2.84	2.85	26.11	13.60	75.40	39.78	34.05	5.73	6.944		
1,000.00	998.22	996.74	993.92	3.19	3.21	26.12	16.67	85.64	42.63	36.25	6.38	6.684		
1,100.00	1,097.89	1,096.70	1,093.31	3.53	3.57	26.12	19.74	95.87	45.47	38.44	7.03	6.468		
1,200.00	1,197.57	1,196.66	1,192.70	3.88	3.93	26.12	22.80	106.11	48.32	40.63	7.69	6.284		
1,300.00	1,297.24	1,296.62	1,292.08	4.24	4.29	26.13	25.87	116.34	51.17	42.81	8.35	6.126		
1,400.00	1,396.91	1,396.58	1,391.47	4.59	4.66	26.13	28.94	126.58	54.01	45.00	9.02	5.991		
1,500.00	1,496.59	1,496.54	1,490.86	4.94	5.02	26.13	32.00	136.81	56.86	47.18	9.68	5.872		
1,600.00	1,596.26	1,596.50	1,590.24	5.29	5.38	26.14	35.07	147.05	59.70	49.35	10.35	5.768		
1,700.00	1,695.93	1,696.46	1,689.63	5.64	5.75	26.14	38.14	157.28	62.55	51.53	11.02	5.676		
1,800.00	1,795.61	1,796.42	1,789.02	5.99	6.11	26.14	41.21	167.52	65.40	53.71	11.69	5.594		
1,900.00	1,895.28	1,896.38	1,888.40	6.34	6.48	26.14	44.27	177.75	68.24	55.88	12.36	5.521		
2,000.00	1,994.96	1,996.34	1,987.79	6.70	6.84	26.14	47.34	187.99	71.09	58.06	13.03	5.454		
2,100.00	2,094.63	2,096.30	2,087.18	7.05	7.21	26.14	50.41	198.22	73.94	60.23	13.71	5.394		
2,200.00	2,194.30	2,196.26	2,186.56	7.40	7.57	26.15	53.47	208.46	76.78	62.40	14.38	5.339		
2,300.00	2,293.98	2,296.21	2,285.95	7.75	7.94	26.15	56.54	218.69	79.63	64.57	15.05	5.289		
2,400.00	2,393.65	2,396.17	2,385.34	8.11	8.31	26.15	59.61	228.93	82.47	66.75	15.73	5.244		
2,500.00	2,493.32	2,496.13	2,484.72	8.46	8.67	26.15	62.68	239.16	85.32	68.92	16.40	5.201		
2,600.00	2,593.00	2,596.09	2,584.11	8.81	9.04	26.15	65.74	249.40	88.17	71.09	17.08	5.162		
2,700.00	2,692.67	2,696.05	2,683.50	9.16	9.40	26.15	68.81	259.63	91.01	73.26	17.75	5.126		
2,800.00	2,792.34	2,796.01	2,782.88	9.52	9.77	26.15	71.88	269.87	93.86	75.43	18.43	5.093		
2,900.00	2,892.02	2,895.97	2,882.27	9.87	10.14	26.15	74.94	280.10	96.71	77.60	19.11	5.062		
3,000.00	2,991.69	2,995.93	2,981.66	10.22	10.50	26.15	78.01	290.34	99.55	79.77	19.78	5.033		
3,100.00	3,091.37	3,095.89	3,081.04	10.57	10.87	26.16	81.08	300.57	102.40	81.94	20.46	5.005		
3,200.00	3,191.04	3,195.85	3,180.43	10.93	11.23	26.16	84.15	310.81	105.24	84.11	21.13	4.980		
3,300.00	3,290.71	3,295.81	3,279.82	11.28	11.60	26.16	87.21	321.04	108.09	86.28	21.81	4.956		
3,400.00	3,390.39	3,395.77	3,379.20	11.63	11.97	26.16	90.28	331.28	110.94	88.45	22.49	4.933		
3,500.00	3,490.06	3,495.73	3,478.59	11.98	12.33	26.16	93.35	341.51	113.78	90.62	23.16	4.912		
3,600.00	3,589.73	3,595.69	3,577.98	12.34	12.70	26.16	96.41	351.75	116.63	92.79	23.84	4.892		
3,700.00	3,689.41	3,695.65	3,677.37	12.69	13.06	26.16	99.48	361.98	119.48	94.96	24.52	4.873		
3,800.00	3,789.08	3,795.61	3,776.75	13.04	13.43	26.16	102.55	372.22	122.32	97.13	25.20	4.855		
3,900.00	3,888.76	3,895.57	3,876.14	13.39	13.80	26.16	105.62	382.45	125.17	99.29	25.87	4.838		
4,000.00	3,988.43	3,995.53	3,975.53	13.75	14.16	26.16	108.68	392.69	128.01	101.46	26.55	4.821		
4,100.00	4,088.10	4,095.49	4,074.91	14.10	14.53	26.16	111.75	402.92	130.86	103.63	27.23	4.806		
4,200.00	4,187.78	4,195.45	4,174.30	14.45	14.90	26.16	114.82	413.16	133.71	105.80	27.91	4.791		
4,300.00	4,287.45	4,295.40	4,273.69	14.81	15.26	26.16	117.88	423.39	136.55	107.97	28.58	4.777		
4,400.00	4,387.12	4,395.36	4,373.07	15.16	15.63	26.16	120.95	433.63	139.40	110.14	29.26	4.764		
4,500.00	4,486.80	4,495.32	4,472.46	15.51	16.00	26.16	124.02	443.86	142.25	112.31	29.94	4.751		
4,599.99	4,586.46	4,595.27	4,571.84	15.86	16.36	26.16	127.09	454.10	145.09	114.48	30.62	4.739		
4,700.00	4,686.27	4,695.18	4,671.17	16.17	16.73	25.90	130.15	464.33	149.53	118.28	31.25	4.784		
4,800.00	4,786.22	4,796.30	4,773.78	16.42	17.07	25.19	133.10	474.15	156.43	124.59	31.84	4.913		
4,900.00	4,886.22	4,903.68	4,878.92	16.70	17.35	91.03	135.08	480.77	162.51	130.13	32.38	5.019		
5,000.00	4,986.22	5,009.41	4,984.60	17.01	17.62	90.71	135.95	483.67	165.25	132.34	32.91	5.022		
5,100.00	5,086.02	5,110.82	5,086.02	17.29	17.89	-90.89	135.99	483.82	165.39	131.94	33.45	4.945		

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





# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,200.00	5,183.26	5,208.07	5,183.26	17.55	18.18	-98.23	135.99	483.82	167.28	133.31	33.97	4.924		
5,300.00	5,274.40	5,307.57	5,282.56	17.81	18.45	-109.17	131.46	483.82	176.62	142.15	34.47	5.124		
5,400.00	5,356.08	5,417.63	5,389.34	18.06	18.74	-119.16	105.60	483.82	192.64	158.18	34.46	5.590		
5,500.00	5,425.31	5,538.72	5,497.62	18.31	19.04	-127.28	52.03	483.82	212.11	178.83	33.28	6.374		
5,600.00	5,479.55	5,672.39	5,599.24	18.57	19.36	-133.41	-34.25	483.82	231.41	200.82	30.58	7.566		
5,700.00	5,516.79	5,818.74	5,681.38	18.87	19.73	-137.55	-154.80	483.82	247.00	220.25	26.75	9.233		
5,800.00	5,535.68	5,975.12	5,728.55	19.24	20.23	-139.69	-303.27	483.82	255.90	232.44	23.46	10.908		
5,900.00	5,538.00	6,106.02	5,735.00	19.68	20.77	-139.99	-433.84	483.82	257.21	234.02	23.19	11.091		
6,000.00	5,538.00	6,206.02	5,735.00	20.21	21.28	-139.99	-533.84	483.82	257.21	233.19	24.02	10.708		
6,100.00	5,538.00	6,306.02	5,735.00	20.84	21.88	-139.99	-633.84	483.82	257.21	232.22	24.99	10.292		
6,200.00	5,538.00	6,406.02	5,735.00	21.55	22.56	-139.99	-733.84	483.82	257.21	231.12	26.09	9.858		
6,300.00	5,538.00	6,506.02	5,735.00	22.34	23.31	-139.99	-833.84	483.82	257.21	229.91	27.30	9.422		
6,400.00	5,538.00	6,606.02	5,735.00	23.19	24.14	-139.99	-933.84	483.82	257.21	228.60	28.61	8.991		
6,500.00	5,538.00	6,706.02	5,735.00	24.11	25.02	-139.99	-1,033.84	483.82	257.21	227.21	30.00	8.574		
6,600.00	5,538.00	6,806.02	5,735.00	25.08	25.96	-139.99	-1,133.84	483.82	257.21	225.75	31.46	8.175		
6,700.00	5,538.00	6,906.02	5,735.00	26.10	26.95	-139.99	-1,233.84	483.82	257.21	224.22	32.99	7.796		
6,800.00	5,538.00	7,006.02	5,735.00	27.16	27.97	-139.99	-1,333.84	483.82	257.21	222.63	34.58	7.439		
6,900.00	5,538.00	7,106.02	5,735.00	28.25	29.04	-139.99	-1,433.84	483.82	257.21	221.00	36.21	7.104		
7,000.00	5,538.00	7,206.02	5,735.00	29.38	30.14	-139.99	-1,533.84	483.82	257.21	219.33	37.88	6.790		
7,100.00	5,538.00	7,306.02	5,735.00	30.54	31.28	-139.99	-1,633.84	483.82	257.21	217.62	39.59	6.497		
7,200.00	5,538.00	7,406.02	5,735.00	31.73	32.44	-139.99	-1,733.84	483.82	257.21	215.88	41.33	6.223		
7,300.00	5,538.00	7,506.02	5,735.00	32.93	33.62	-139.99	-1,833.84	483.82	257.21	214.11	43.10	5.968		
7,400.00	5,538.00	7,606.02	5,735.00	34.16	34.83	-139.99	-1,933.84	483.82	257.21	212.31	44.89	5.729		
7,500.00	5,538.00	7,706.02	5,735.00	35.41	36.06	-139.99	-2,033.84	483.82	257.21	210.50	46.71	5.506		
7,600.00	5,538.00	7,806.02	5,735.00	36.67	37.30	-139.99	-2,133.84	483.82	257.21	208.66	48.55	5.298		
7,700.00	5,538.00	7,906.02	5,735.00	37.95	38.56	-139.99	-2,233.84	483.82	257.21	206.81	50.40	5.103		
7,800.00	5,538.00	8,006.02	5,735.00	39.25	39.84	-139.99	-2,333.84	483.82	257.21	204.94	52.27	4.921		
7,900.00	5,538.00	8,106.02	5,735.00	40.55	41.12	-139.99	-2,433.84	483.82	257.21	203.06	54.15	4.750		
8,000.00	5,538.00	8,206.02	5,735.00	41.87	42.42	-139.99	-2,533.84	483.82	257.21	201.17	56.04	4.589		
8,100.00	5,538.00	8,306.02	5,735.00	43.19	43.74	-139.99	-2,633.84	483.82	257.21	199.26	57.95	4.438		
8,200.00	5,538.00	8,406.02	5,735.00	44.53	45.06	-139.99	-2,733.84	483.82	257.21	197.34	59.87	4.296		
8,300.00	5,538.00	8,506.02	5,735.00	45.87	46.39	-139.99	-2,833.84	483.82	257.21	195.42	61.79	4.163		
8,400.00	5,538.00	8,606.02	5,735.00	47.22	47.73	-139.99	-2,933.84	483.82	257.21	193.49	63.72	4.036		
8,500.00	5,538.00	8,706.02	5,735.00	48.58	49.07	-139.99	-3,033.84	483.82	257.21	191.54	65.67	3.917		
8,600.00	5,538.00	8,806.02	5,735.00	49.95	50.42	-139.99	-3,133.84	483.82	257.21	189.60	67.61	3.804		
8,700.00	5,538.00	8,906.02	5,735.00	51.32	51.78	-139.99	-3,233.84	483.82	257.21	187.64	69.57	3.697		
8,800.00	5,538.00	9,006.02	5,735.00	52.69	53.15	-139.99	-3,333.84	483.83	257.21	185.68	71.53	3.596		
8,900.00	5,538.00	9,106.02	5,735.00	54.07	54.52	-139.99	-3,433.84	483.83	257.21	183.72	73.50	3.500		
9,000.00	5,538.00	9,206.02	5,735.00	55.46	55.90	-139.99	-3,533.84	483.83	257.21	181.74	75.47	3.408		
9,100.00	5,538.00	9,306.02	5,735.00	56.85	57.28	-139.99	-3,633.84	483.83	257.21	179.77	77.44	3.321		
9,200.00	5,538.00	9,406.02	5,735.00	58.24	58.66	-139.99	-3,733.84	483.83	257.21	177.79	79.42	3.239		
9,300.00	5,538.00	9,506.02	5,735.00	59.64	60.05	-139.99	-3,833.84	483.83	257.21	175.81	81.41	3.160		
9,400.00	5,538.00	9,606.02	5,735.00	61.04	61.45	-139.99	-3,933.84	483.83	257.21	173.82	83.39	3.084		
9,500.00	5,538.00	9,706.02	5,735.00	62.45	62.84	-139.99	-4,033.84	483.83	257.21	171.83	85.38	3.012		
9,600.00	5,538.00	9,806.02	5,735.00	63.86	64.24	-139.99	-4,133.84	483.83	257.21	169.83	87.38	2.944		
9,700.00	5,538.00	9,906.02	5,735.00	65.27	65.65	-139.99	-4,233.84	483.83	257.21	167.84	89.37	2.878		
9,800.00	5,538.00	10,006.02	5,735.00	66.68	67.05	-139.99	-4,333.84	483.83	257.21	165.84	91.37	2.815		
9,900.00	5,538.00	10,106.02	5,735.00	68.09	68.46	-139.99	-4,433.84	483.83	257.21	163.84	93.38	2.755		
10,000.00	5,538.00	10,206.02	5,735.00	69.51	69.88	-139.99	-4,533.84	483.83	257.21	161.83	95.38	2.697		
10,100.00	5,538.00	10,306.02	5,735.00	70.93	71.29	-139.99	-4,633.84	483.83	257.21	159.82	97.39	2.641		
10,200.00	5,538.00	10,406.02	5,735.00	72.35	72.71	-139.99	-4,733.84	483.83	257.21	157.82	99.40	2.588		
10,300.00	5,538.00	10,506.02	5,735.00	73.78	74.12	-139.99	-4,833.84	483.83	257.21	155.80	101.41	2.536		

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





**WOG**  
Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													Offset Well Error:	0.00 usft
Reference				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		
10,400.00	5,538.00	10,606.02	5,735.00	75.20	75.54	-139.99	-4,933.84	483.83	257.21	153.79	103.42	2.487		
10,500.00	5,538.00	10,706.02	5,735.00	76.63	76.97	-139.99	-5,033.84	483.83	257.21	151.78	105.44	2.440		
10,600.00	5,538.00	10,806.02	5,735.00	78.06	78.39	-139.99	-5,133.84	483.83	257.21	149.76	107.45	2.394		
10,700.00	5,538.00	10,906.02	5,735.00	79.49	79.82	-139.99	-5,233.84	483.83	257.21	147.74	109.47	2.350		
10,800.00	5,538.00	11,006.02	5,735.00	80.92	81.25	-139.99	-5,333.84	483.83	257.21	145.72	111.49	2.307		
10,900.00	5,538.00	11,106.02	5,735.00	82.36	82.67	-139.99	-5,433.84	483.83	257.21	143.70	113.51	2.266		
11,000.00	5,538.00	11,206.02	5,735.00	83.79	84.11	-139.99	-5,533.84	483.83	257.21	141.68	115.53	2.226		
11,100.00	5,538.00	11,306.02	5,735.00	85.23	85.54	-139.99	-5,633.84	483.83	257.21	139.66	117.56	2.188		
11,200.00	5,538.00	11,406.02	5,735.00	86.67	86.97	-139.99	-5,733.84	483.83	257.21	137.63	119.58	2.151		
11,300.00	5,538.00	11,506.02	5,735.00	88.11	88.41	-139.99	-5,833.84	483.83	257.21	135.60	121.61	2.115		
11,400.00	5,538.00	11,606.02	5,735.00	89.55	89.84	-139.99	-5,933.84	483.83	257.21	133.58	123.64	2.080		
11,500.00	5,538.00	11,706.02	5,735.00	90.99	91.28	-139.99	-6,033.84	483.83	257.21	131.55	125.66	2.047		
11,600.00	5,538.00	11,806.02	5,735.00	92.43	92.72	-139.99	-6,133.84	483.83	257.21	129.52	127.69	2.014		
11,700.00	5,538.00	11,906.02	5,735.00	93.87	94.16	-139.99	-6,233.84	483.83	257.21	127.49	129.72	1.983		
11,800.00	5,538.00	12,006.02	5,735.00	95.31	95.60	-139.99	-6,333.84	483.83	257.21	125.46	131.75	1.952		
11,900.00	5,538.00	12,106.02	5,735.00	96.76	97.04	-139.99	-6,433.84	483.83	257.21	123.43	133.79	1.923		
12,000.00	5,538.00	12,206.02	5,735.00	98.20	98.48	-139.99	-6,533.84	483.83	257.21	121.39	135.82	1.894		
12,100.00	5,538.00	12,306.02	5,735.00	99.65	99.92	-139.99	-6,633.84	483.83	257.21	119.36	137.85	1.866		
12,200.00	5,538.00	12,406.02	5,735.00	101.10	101.37	-139.99	-6,733.84	483.83	257.21	117.33	139.89	1.839		
12,300.00	5,538.00	12,506.02	5,735.00	102.54	102.81	-139.99	-6,833.84	483.83	257.21	115.29	141.92	1.812		
12,400.00	5,538.00	12,606.02	5,735.00	103.99	104.26	-139.99	-6,933.84	483.83	257.21	113.26	143.96	1.787		
12,500.00	5,538.00	12,706.02	5,735.00	105.44	105.70	-139.99	-7,033.84	483.83	257.21	111.22	145.99	1.762		
12,600.00	5,538.00	12,806.02	5,735.00	106.89	107.15	-139.99	-7,133.84	483.83	257.21	109.18	148.03	1.738		
12,700.00	5,538.00	12,906.02	5,735.00	108.34	108.60	-139.99	-7,233.84	483.83	257.21	107.15	150.07	1.714		
12,800.00	5,538.00	13,006.02	5,735.00	109.79	110.04	-139.99	-7,333.84	483.83	257.21	105.11	152.11	1.691		
12,900.00	5,538.00	13,106.02	5,735.00	111.24	111.49	-139.99	-7,433.84	483.83	257.21	103.07	154.15	1.669		
13,000.00	5,538.00	13,206.02	5,735.00	112.69	112.94	-139.99	-7,533.84	483.83	257.21	101.03	156.18	1.647		
13,100.00	5,538.00	13,306.02	5,735.00	114.14	114.39	-139.99	-7,633.84	483.83	257.21	98.99	158.22	1.626		
13,200.00	5,538.00	13,406.02	5,735.00	115.60	115.84	-139.99	-7,733.84	483.83	257.21	96.95	160.26	1.605		
13,300.00	5,538.00	13,506.02	5,735.00	117.05	117.29	-139.99	-7,833.84	483.83	257.21	94.91	162.31	1.585		
13,400.00	5,538.00	13,606.02	5,735.00	118.50	118.74	-139.99	-7,933.84	483.83	257.21	92.87	164.35	1.565		
13,500.00	5,538.00	13,706.02	5,735.00	119.96	120.20	-139.99	-8,033.84	483.83	257.22	90.83	166.39	1.546		
13,600.00	5,538.00	13,806.02	5,735.00	121.41	121.65	-139.99	-8,133.84	483.83	257.22	88.78	168.43	1.527		
13,605.27	5,538.00	13,811.29	5,735.00	121.48	121.72	-139.99	-8,139.11	483.83	257.22	88.69	168.53	1.526		
13,650.59	5,538.00	13,855.60	5,735.00	122.08	122.37	-139.99	-8,183.41	483.83	257.22	87.81	169.41	1.518 SF		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
0.00	0.00	0.00	0.00	0.00	0.00	90.00	-0.01	119.96	119.96					
100.00	100.00	100.00	100.00	0.13	0.13	90.00	-0.01	119.96	119.96	119.69	0.27	450.376		
200.00	200.00	200.00	200.00	0.47	0.47	90.00	-0.01	119.96	119.96	119.02	0.94	127.526		
300.00	300.00	300.00	300.00	0.81	0.81	90.00	-0.01	119.96	119.96	118.34	1.61	74.279 CC		
400.00	399.98	396.01	395.99	1.14	1.12	23.65	0.20	121.55	120.02	117.71	2.31	52.007		
500.00	499.84	492.01	491.87	1.47	1.43	24.31	0.82	126.34	120.21	117.17	3.04	39.479 ES		
600.00	599.52	587.99	587.51	1.81	1.76	25.24	1.84	134.30	121.32	117.51	3.80	31.890		
700.00	699.20	683.82	682.67	2.15	2.10	25.93	3.28	145.42	125.59	121.02	4.57	27.463		
800.00	798.87	779.29	777.06	2.49	2.45	26.31	5.12	159.63	133.16	127.82	5.34	24.936		
900.00	898.55	874.19	870.36	2.84	2.82	26.43	7.34	176.84	143.99	137.89	6.10	23.611		
1,000.00	998.22	968.33	962.28	3.19	3.21	26.31	9.93	196.92	158.04	151.19	6.84	23.091		
1,100.00	1,097.89	1,063.30	1,054.35	3.53	3.63	26.04	12.92	220.04	175.10	167.57	7.53	23.266		
1,200.00	1,197.57	1,161.71	1,149.56	3.88	4.08	25.77	16.10	244.69	192.89	184.77	8.12	23.758		
1,300.00	1,297.24	1,260.11	1,244.77	4.24	4.54	25.55	19.28	269.34	210.68	201.97	8.71	24.190		
1,400.00	1,396.91	1,358.51	1,339.98	4.59	5.01	25.36	22.47	293.99	228.48	219.16	9.32	24.504		
1,500.00	1,496.59	1,456.91	1,435.19	4.94	5.48	25.19	25.65	318.64	246.28	236.33	9.95	24.760		
1,600.00	1,596.26	1,555.31	1,530.40	5.29	5.95	25.05	28.83	343.29	264.08	253.50	10.58	24.969		
1,700.00	1,695.93	1,653.71	1,625.61	5.64	6.43	24.93	32.01	367.94	281.88	270.67	11.21	25.140		
1,800.00	1,795.61	1,752.11	1,720.82	5.99	6.91	24.82	35.20	392.59	299.68	287.83	11.85	25.281		
1,900.00	1,895.28	1,850.51	1,816.04	6.34	7.39	24.73	38.38	417.24	317.49	304.99	12.50	25.399		
2,000.00	1,994.96	1,948.91	1,911.25	6.70	7.87	24.64	41.56	441.89	335.29	322.14	13.15	25.498		
2,100.00	2,094.63	2,047.32	2,006.46	7.05	8.35	24.57	44.75	466.54	353.10	339.29	13.80	25.581		
2,200.00	2,194.30	2,145.72	2,101.67	7.40	8.83	24.50	47.93	491.19	370.90	356.44	14.46	25.652		
2,300.00	2,293.98	2,244.12	2,196.88	7.75	9.32	24.43	51.11	515.83	388.71	373.59	15.12	25.712		
2,400.00	2,393.65	2,342.52	2,292.09	8.11	9.80	24.37	54.30	540.48	406.51	390.73	15.78	25.764		
2,500.00	2,493.32	2,440.92	2,387.30	8.46	10.29	24.32	57.48	565.13	424.32	407.88	16.44	25.808		
2,600.00	2,593.00	2,539.32	2,482.51	8.81	10.78	24.27	60.66	589.78	442.13	425.02	17.11	25.846		
2,700.00	2,692.67	2,637.72	2,577.72	9.16	11.26	24.23	63.84	614.43	459.93	442.16	17.77	25.880		
2,800.00	2,792.34	2,736.12	2,672.93	9.52	11.75	24.19	67.03	639.08	477.74	459.30	18.44	25.909		
2,900.00	2,892.02	2,834.52	2,768.14	9.87	12.24	24.15	70.21	663.73	495.55	476.44	19.11	25.934		
3,000.00	2,991.69	2,932.93	2,863.35	10.22	12.72	24.11	73.39	688.38	513.36	493.58	19.78	25.956		
3,100.00	3,091.37	3,031.33	2,958.56	10.57	13.21	24.08	76.58	713.03	531.16	510.72	20.45	25.976		
3,200.00	3,191.04	3,129.73	3,053.77	10.93	13.70	24.05	79.76	737.68	548.97	527.85	21.12	25.993		
3,300.00	3,290.71	3,228.13	3,148.98	11.28	14.19	24.02	82.94	762.33	566.78	544.99	21.79	26.008		
3,400.00	3,390.39	3,326.53	3,244.19	11.63	14.68	23.99	86.13	786.98	584.59	562.12	22.47	26.022		
3,500.00	3,490.06	3,424.93	3,339.41	11.98	15.17	23.97	89.31	811.63	602.40	579.26	23.14	26.034		
3,600.00	3,589.73	3,523.33	3,434.62	12.34	15.65	23.94	92.49	836.27	620.21	596.39	23.81	26.044		
3,700.00	3,689.41	3,621.73	3,529.83	12.69	16.14	23.92	95.67	860.92	638.02	613.53	24.49	26.053		
3,800.00	3,789.08	3,720.13	3,625.04	13.04	16.63	23.90	98.86	885.57	655.83	630.66	25.16	26.062		
3,900.00	3,888.76	3,818.54	3,720.25	13.39	17.12	23.88	102.04	910.22	673.63	647.79	25.84	26.069		
4,000.00	3,988.43	3,916.94	3,815.46	13.75	17.61	23.86	105.22	934.87	691.44	664.93	26.52	26.076		
4,100.00	4,088.10	4,015.34	3,910.67	14.10	18.10	23.84	108.41	959.52	709.25	682.06	27.19	26.081		
4,200.00	4,187.78	4,113.74	4,005.88	14.45	18.59	23.82	111.59	984.17	727.06	699.19	27.87	26.086		
4,300.00	4,287.45	4,212.14	4,101.09	14.81	19.08	23.80	114.77	1,008.82	744.87	716.32	28.55	26.091		
4,400.00	4,387.12	4,310.54	4,196.30	15.16	19.57	23.79	117.96	1,033.47	762.68	733.45	29.23	26.095		
4,500.00	4,486.80	4,409.36	4,291.91	15.51	20.06	23.77	121.15	1,058.22	780.49	750.58	29.91	26.096		
4,599.99	4,586.46	4,545.18	4,424.11	15.86	20.59	23.78	125.14	1,089.07	795.93	765.17	30.77	25.870		
4,700.00	4,686.27	4,682.52	4,559.13	16.17	21.04	23.89	128.34	1,113.91	808.31	776.81	31.50	25.663		
4,800.00	4,786.22	4,820.86	4,696.20	16.42	21.44	23.91	130.73	1,132.42	819.12	787.00	32.12	25.504		
4,900.00	4,886.22	4,960.18	4,834.98	16.70	21.79	23.90	132.28	1,144.40	827.56	794.87	32.69	25.318		
5,000.00	4,986.22	5,100.32	4,975.01	17.01	22.11	23.90	132.96	1,149.69	831.33	798.13	33.20	25.038		
5,100.00	5,086.02	5,211.34	5,086.02	17.29	22.35	-89.97	133.00	1,149.96	831.51	797.77	33.73	24.650		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
5,103.04	5,089.03	5,214.35	5,089.03	17.30	22.36	-90.00	133.00	1,149.96	831.51	797.76	33.75	24.638		
5,200.00	5,183.26	5,308.58	5,183.26	17.55	22.59	-91.45	133.00	1,149.96	831.80	797.57	34.24	24.295		
5,300.00	5,274.40	5,407.92	5,282.40	17.81	22.80	-93.77	128.49	1,149.95	833.59	798.90	34.69	24.032		
5,400.00	5,356.08	5,517.70	5,388.92	18.06	23.03	-96.17	102.76	1,149.89	836.96	801.89	35.07	23.863		
5,500.00	5,425.31	5,638.45	5,496.96	18.31	23.26	-98.47	49.46	1,149.76	841.47	806.08	35.39	23.778		
5,600.00	5,479.55	5,771.75	5,598.46	18.57	23.50	-100.55	-36.39	1,149.56	846.35	810.75	35.60	23.772		
5,700.00	5,516.79	5,917.77	5,680.72	18.87	23.77	-102.20	-156.46	1,149.29	850.57	814.78	35.79	23.768		
5,800.00	5,535.68	6,073.93	5,728.28	19.24	24.14	-103.18	-304.59	1,148.94	853.04	816.92	36.12	23.617		
5,900.00	5,538.00	6,205.46	5,735.00	19.68	24.54	-103.35	-435.76	1,148.64	853.25	816.37	36.87	23.140		
6,000.00	5,538.00	6,305.46	5,735.00	20.21	24.94	-103.35	-535.75	1,148.41	853.02	815.07	37.95	22.476		
6,100.00	5,538.00	6,405.46	5,735.00	20.84	25.41	-103.36	-635.75	1,148.18	852.80	813.58	39.21	21.748		
6,200.00	5,538.00	6,505.46	5,735.00	21.55	25.96	-103.36	-735.75	1,147.95	852.57	811.93	40.64	20.980		
6,300.00	5,538.00	6,605.46	5,735.00	22.34	26.58	-103.36	-835.75	1,147.72	852.35	810.14	42.21	20.193		
6,400.00	5,538.00	6,705.46	5,735.00	23.19	27.28	-103.37	-935.75	1,147.49	852.12	808.21	43.91	19.404		
6,500.00	5,538.00	6,805.46	5,735.00	24.11	28.03	-103.37	-1,035.75	1,147.25	851.90	806.16	45.74	18.627		
6,600.00	5,538.00	6,905.45	5,735.00	25.08	28.85	-103.37	-1,135.75	1,147.02	851.67	804.01	47.66	17.870		
6,700.00	5,538.00	7,005.45	5,735.00	26.10	29.72	-103.38	-1,235.75	1,146.79	851.45	801.77	49.68	17.140		
6,800.00	5,538.00	7,105.45	5,735.00	27.16	30.64	-103.38	-1,335.75	1,146.56	851.22	799.45	51.77	16.442		
6,900.00	5,538.00	7,205.45	5,735.00	28.25	31.61	-103.39	-1,435.75	1,146.33	851.00	797.06	53.94	15.777		
7,000.00	5,538.00	7,305.45	5,735.00	29.38	32.61	-103.39	-1,535.75	1,146.10	850.77	794.60	56.17	15.146		
7,100.00	5,538.00	7,405.45	5,735.00	30.54	33.66	-103.39	-1,635.75	1,145.87	850.55	792.09	58.46	14.549		
7,200.00	5,538.00	7,505.45	5,735.00	31.73	34.73	-103.40	-1,735.75	1,145.64	850.32	789.53	60.80	13.987		
7,300.00	5,538.00	7,605.45	5,735.00	32.93	35.84	-103.40	-1,835.75	1,145.40	850.10	786.92	63.18	13.456		
7,400.00	5,538.00	7,705.45	5,735.00	34.16	36.97	-103.40	-1,935.75	1,145.17	849.87	784.28	65.60	12.956		
7,500.00	5,538.00	7,805.45	5,735.00	35.41	38.12	-103.41	-2,035.75	1,144.94	849.65	781.60	68.05	12.485		
7,600.00	5,538.00	7,905.45	5,735.00	36.67	39.30	-103.41	-2,135.75	1,144.71	849.42	778.89	70.54	12.042		
7,700.00	5,538.00	8,005.45	5,735.00	37.95	40.49	-103.41	-2,235.75	1,144.48	849.20	776.15	73.05	11.625		
7,800.00	5,538.00	8,105.45	5,735.00	39.25	41.71	-103.42	-2,335.75	1,144.25	848.97	773.38	75.59	11.231		
7,900.00	5,538.00	8,205.45	5,735.00	40.55	42.94	-103.42	-2,435.74	1,144.02	848.75	770.59	78.15	10.860		
8,000.00	5,538.00	8,305.45	5,735.00	41.87	44.19	-103.42	-2,535.74	1,143.79	848.52	767.79	80.74	10.510		
8,100.00	5,538.00	8,405.45	5,735.00	43.19	45.45	-103.43	-2,635.74	1,143.56	848.30	764.96	83.34	10.179		
8,200.00	5,538.00	8,505.45	5,735.00	44.53	46.72	-103.43	-2,735.74	1,143.32	848.07	762.11	85.96	9.866		
8,300.00	5,538.00	8,605.45	5,735.00	45.87	48.00	-103.44	-2,835.74	1,143.09	847.85	759.25	88.59	9.570		
8,400.00	5,538.00	8,705.45	5,735.00	47.22	49.30	-103.44	-2,935.74	1,142.86	847.62	756.38	91.24	9.290		
8,500.00	5,538.00	8,805.45	5,735.00	48.58	50.60	-103.44	-3,035.74	1,142.63	847.40	753.49	93.90	9.024		
8,600.00	5,538.00	8,905.45	5,735.00	49.95	51.92	-103.45	-3,135.74	1,142.40	847.17	750.60	96.58	8.772		
8,700.00	5,538.00	9,005.45	5,735.00	51.32	53.24	-103.45	-3,235.74	1,142.17	846.95	747.69	99.26	8.532		
8,800.00	5,538.00	9,105.45	5,735.00	52.69	54.57	-103.45	-3,335.74	1,141.94	846.72	744.77	101.96	8.305		
8,900.00	5,538.00	9,205.45	5,735.00	54.07	55.91	-103.46	-3,435.74	1,141.71	846.50	741.84	104.66	8.088		
9,000.00	5,538.00	9,305.45	5,735.00	55.46	57.25	-103.46	-3,535.74	1,141.47	846.27	738.90	107.37	7.882		
9,100.00	5,538.00	9,405.45	5,735.00	56.85	58.60	-103.46	-3,635.74	1,141.24	846.05	735.96	110.09	7.685		
9,200.00	5,538.00	9,505.45	5,735.00	58.24	59.96	-103.47	-3,735.74	1,141.01	845.82	733.00	112.82	7.497		
9,300.00	5,538.00	9,605.45	5,735.00	59.64	61.32	-103.47	-3,835.74	1,140.78	845.60	730.04	115.56	7.318		
9,400.00	5,538.00	9,705.45	5,735.00	61.04	62.68	-103.48	-3,935.74	1,140.55	845.37	727.08	118.30	7.146		
9,500.00	5,538.00	9,805.45	5,735.00	62.45	64.06	-103.48	-4,035.74	1,140.32	845.15	724.11	121.04	6.982		
9,600.00	5,538.00	9,905.45	5,735.00	63.86	65.43	-103.48	-4,135.74	1,140.09	844.93	721.13	123.80	6.825		
9,700.00	5,538.00	10,005.45	5,735.00	65.27	66.81	-103.49	-4,235.74	1,139.86	844.70	718.15	126.55	6.675		
9,800.00	5,538.00	10,105.45	5,735.00	66.68	68.19	-103.49	-4,335.73	1,139.63	844.48	715.16	129.31	6.530		
9,900.00	5,538.00	10,205.45	5,735.00	68.09	69.58	-103.49	-4,435.73	1,139.39	844.25	712.17	132.08	6.392		
10,000.00	5,538.00	10,305.45	5,735.00	69.51	70.97	-103.50	-4,535.73	1,139.16	844.03	709.17	134.85	6.259		
10,100.00	5,538.00	10,405.45	5,735.00	70.93	72.36	-103.50	-4,635.73	1,138.93	843.80	706.17	137.63	6.131		
10,200.00	5,538.00	10,505.45	5,735.00	72.35	73.76	-103.51	-4,735.73	1,138.70	843.58	703.17	140.41	6.008		

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



# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS+sag													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		
10,300.00	5,538.00	10,605.45	5,735.00	73.78	75.16	-103.51	-4,835.73	1,138.47	843.35	700.16	143.19	5.890		
10,400.00	5,538.00	10,705.44	5,735.00	75.20	76.56	-103.51	-4,935.73	1,138.24	843.13	697.15	145.97	5.776		
10,500.00	5,538.00	10,805.44	5,735.00	76.63	77.97	-103.52	-5,035.73	1,138.01	842.90	694.14	148.76	5.666		
10,600.00	5,538.00	10,905.44	5,735.00	78.06	79.37	-103.52	-5,135.73	1,137.78	842.68	691.12	151.55	5.560		
10,700.00	5,538.00	11,005.44	5,735.00	79.49	80.78	-103.52	-5,235.73	1,137.54	842.45	688.11	154.35	5.458		
10,800.00	5,538.00	11,105.44	5,735.00	80.92	82.20	-103.53	-5,335.73	1,137.31	842.23	685.08	157.14	5.360		
10,900.00	5,538.00	11,205.44	5,735.00	82.36	83.61	-103.53	-5,435.73	1,137.08	842.00	682.06	159.94	5.264		
11,000.00	5,538.00	11,305.44	5,735.00	83.79	85.02	-103.53	-5,535.73	1,136.85	841.78	679.03	162.74	5.172		
11,100.00	5,538.00	11,405.44	5,735.00	85.23	86.44	-103.54	-5,635.73	1,136.62	841.55	676.01	165.55	5.083		
11,200.00	5,538.00	11,505.44	5,735.00	86.67	87.86	-103.54	-5,735.73	1,136.39	841.33	672.97	168.35	4.997		
11,300.00	5,538.00	11,605.44	5,735.00	88.11	89.28	-103.55	-5,835.73	1,136.16	841.10	669.94	171.16	4.914		
11,400.00	5,538.00	11,705.44	5,735.00	89.55	90.71	-103.55	-5,935.73	1,135.93	840.88	666.91	173.97	4.833		
11,500.00	5,538.00	11,805.44	5,735.00	90.99	92.13	-103.55	-6,035.73	1,135.70	840.65	663.87	176.78	4.755		
11,600.00	5,538.00	11,905.44	5,735.00	92.43	93.55	-103.56	-6,135.72	1,135.46	840.43	660.83	179.60	4.680		
11,700.00	5,538.00	12,005.44	5,735.00	93.87	94.98	-103.56	-6,235.72	1,135.23	840.20	657.79	182.41	4.606		
11,800.00	5,538.00	12,105.44	5,735.00	95.31	96.41	-103.56	-6,335.72	1,135.00	839.98	654.75	185.23	4.535		
11,900.00	5,538.00	12,205.44	5,735.00	96.76	97.84	-103.57	-6,435.72	1,134.77	839.75	651.71	188.04	4.466		
12,000.00	5,538.00	12,305.44	5,735.00	98.20	99.27	-103.57	-6,535.72	1,134.54	839.53	648.67	190.86	4.399		
12,100.00	5,538.00	12,405.44	5,735.00	99.65	100.70	-103.58	-6,635.72	1,134.31	839.30	645.62	193.68	4.333		
12,200.00	5,538.00	12,505.44	5,735.00	101.10	102.14	-103.58	-6,735.72	1,134.08	839.08	642.57	196.51	4.270		
12,300.00	5,538.00	12,605.44	5,735.00	102.54	103.57	-103.58	-6,835.72	1,133.85	838.86	639.53	199.33	4.208		
12,400.00	5,538.00	12,705.44	5,735.00	103.99	105.01	-103.59	-6,935.72	1,133.61	838.63	636.48	202.15	4.148		
12,500.00	5,538.00	12,805.44	5,735.00	105.44	106.44	-103.59	-7,035.72	1,133.38	838.41	633.43	204.98	4.090		
12,600.00	5,538.00	12,905.44	5,735.00	106.89	107.88	-103.59	-7,135.72	1,133.15	838.18	630.38	207.81	4.033		
12,700.00	5,538.00	13,005.44	5,735.00	108.34	109.32	-103.60	-7,235.72	1,132.92	837.96	627.32	210.63	3.978		
12,800.00	5,538.00	13,105.44	5,735.00	109.79	110.76	-103.60	-7,335.72	1,132.69	837.73	624.27	213.46	3.925		
12,900.00	5,538.00	13,205.44	5,735.00	111.24	112.19	-103.60	-7,435.72	1,132.46	837.51	621.22	216.29	3.872		
13,000.00	5,538.00	13,305.44	5,735.00	112.69	113.64	-103.61	-7,535.72	1,132.23	837.28	618.16	219.12	3.821		
13,100.00	5,538.00	13,405.44	5,735.00	114.14	115.08	-103.61	-7,635.72	1,132.00	837.06	615.10	221.95	3.771		
13,200.00	5,538.00	13,505.44	5,735.00	115.60	116.52	-103.62	-7,735.72	1,131.77	836.83	612.05	224.78	3.723		
13,300.00	5,538.00	13,605.44	5,735.00	117.05	117.96	-103.62	-7,835.72	1,131.53	836.61	608.99	227.62	3.676		
13,400.00	5,538.00	13,705.44	5,735.00	118.50	119.41	-103.62	-7,935.72	1,131.30	836.38	605.93	230.45	3.629		
13,500.00	5,538.00	13,805.44	5,735.00	119.96	120.85	-103.63	-8,035.71	1,131.07	836.16	602.87	233.28	3.584		
13,600.00	5,538.00	13,905.44	5,735.00	121.41	122.29	-103.63	-8,135.71	1,130.84	835.93	599.81	236.12	3.540		
13,645.16	5,538.00	13,949.06	5,735.00	122.01	122.92	-103.63	-8,179.34	1,130.74	835.83	598.49	237.34	3.522		
13,650.59	5,538.00	13,949.06	5,735.00	122.08	122.92	-103.63	-8,179.34	1,130.74	835.85	598.33	237.52	3.519 SF		

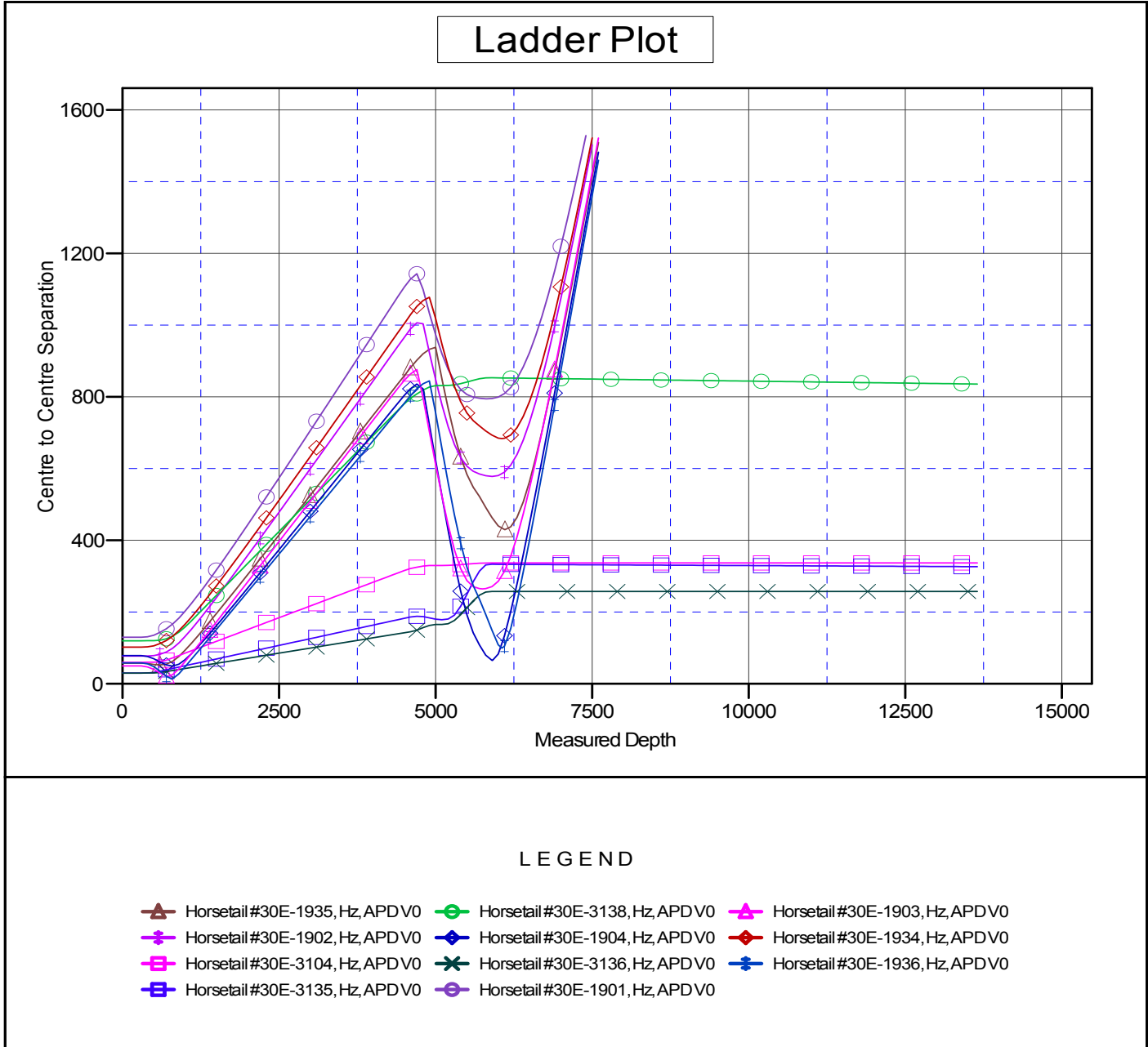
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# WOG Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	Hz	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KBE @ 4827.40usft (Original Well Ele)      Coordinates are relative to: Horsetail #30E-3103  
 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: 1.10°



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

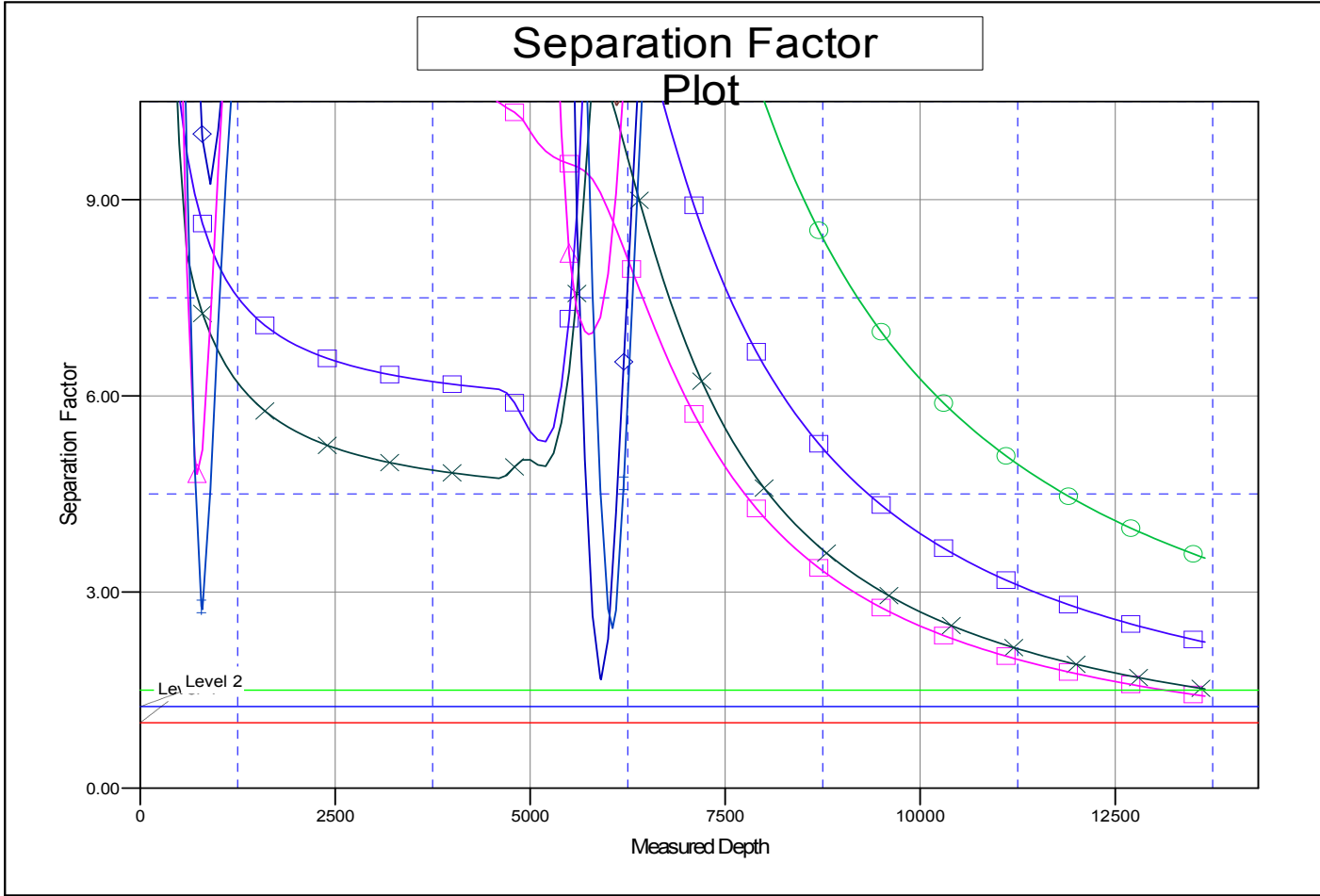


# WOG

## Anticollision Report

<b>Company:</b>	Whiting Petroleum Corp.	<b>Local Co-ordinate Reference:</b>	Well Horsetail #30E-3103
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Reference Site:</b>	Sec 30-T10N-R57W	<b>MD Reference:</b>	KBE @ 4827.40usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Horsetail #30E-3103	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	3.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	LandmarkEDM
<b>Reference Design:</b>	APD	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KBE @ 4827.40usft (Original Well Ele)      Coordinates are relative to: Horsetail #30E-3103  
 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: 1.10°



### LEGEND

▲ Horsetail #30E-1935, Hz, APDV0	● Horsetail #30E-3138, Hz, APDV0	▲ Horsetail #30E-1903, Hz, APDV0
◆ Horsetail #30E-1902, Hz, APDV0	◆ Horsetail #30E-1904, Hz, APDV0	◆ Horsetail #30E-1934, Hz, APDV0
■ Horsetail #30E-3104, Hz, APDV0	✕ Horsetail #30E-3136, Hz, APDV0	◆ Horsetail #30E-1936, Hz, APDV0
■ Horsetail #30E-3135, Hz, APDV0	○ Horsetail #30E-1901, Hz, APDV0	

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