



# **WHITING PETROLEUM CORP.**

**Weld County, CO**

**Sec 25-T10N-R58W**

**Razor #25N-2407**

**Original Hole**

**Design: Original Hole**

## **Standard Survey Report**

**25 July, 2016**

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Razor #25N-2407
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Well:</b>	Razor #25N-2407	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	COMPASS_ROCKIES

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

<b>Site</b>	Sec 25-T10N-R58W		
<b>Site Position:</b>		<b>Northing:</b>	1,544,564.45 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,464,883.62 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	40.816125°N
		<b>Longitude:</b>	103.820411°W
		<b>Grid Convergence:</b>	1.09 °

<b>Well</b>	Razor #25N-2407		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b> 1,539,962.20 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b> 3,466,449.16 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40.803414°N
		<b>Longitude:</b>	103.815072°W
		<b>Ground Level:</b>	4,701.00 usft

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/13/2015	7.84	67.38	53,024

<b>Design</b>	Original Hole				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	359.76	

<b>Survey Program</b>	<b>Date</b> 7/25/2016				
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
223.00	15,680.00	Survey #1 (Original Hole)	MWD+IFR1+MS+sag	Fixed:v2:crustal dec & 3-axis correction + sag OWSG BLIND	
15,740.00	15,740.00	Survey #2 (Original Hole)	BLIND		

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
223.00	1.59	349.57	222.97	3.04	-0.56	3.05	0.71	0.71	0.00	
314.00	0.93	302.20	313.95	4.68	-1.41	4.68	1.30	-0.73	-52.05	
406.00	1.89	225.24	405.93	4.01	-3.12	4.02	2.07	1.04	-83.65	
496.00	3.70	209.17	495.82	0.43	-5.59	0.45	2.17	2.01	-17.86	
589.00	3.95	202.22	588.61	-5.16	-8.27	-5.12	0.57	0.27	-7.47	
680.00	4.30	202.09	679.38	-11.22	-10.73	-11.18	0.38	0.38	-0.14	
772.00	4.32	187.52	771.12	-17.85	-12.49	-17.80	1.19	0.02	-15.84	
864.00	4.32	188.47	862.86	-24.72	-13.45	-24.66	0.08	0.00	1.03	
956.00	4.55	188.62	954.58	-31.75	-14.51	-31.69	0.25	0.25	0.16	

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## Survey Report

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<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Well:</b>	Razor #25N-2407	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	COMPASS_ROCKIES

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,045.00	5.00	190.09	1,043.27	-39.06	-15.71	-38.99	0.52	0.51	1.65
1,136.00	5.54	190.90	1,133.89	-47.28	-17.24	-47.20	0.60	0.59	0.89
1,226.00	5.93	192.71	1,223.44	-56.08	-19.08	-56.00	0.48	0.43	2.01
1,317.00	5.67	184.10	1,313.97	-65.15	-20.44	-65.06	1.00	-0.29	-9.46
1,408.00	4.39	190.10	1,404.62	-73.06	-21.37	-72.97	1.52	-1.41	6.59
1,500.00	2.89	184.36	1,496.43	-78.84	-22.17	-78.75	1.68	-1.63	-6.24
1,592.00	2.75	179.65	1,588.32	-83.36	-22.33	-83.27	0.29	-0.15	-5.12
1,684.00	3.01	175.44	1,680.21	-87.97	-22.12	-87.88	0.36	0.28	-4.58
1,776.00	3.11	177.46	1,772.07	-92.88	-21.82	-92.78	0.16	0.11	2.20
1,868.00	3.17	173.03	1,863.94	-97.89	-21.40	-97.80	0.27	0.07	-4.82
1,960.00	3.37	169.77	1,955.79	-103.08	-20.61	-102.99	0.30	0.22	-3.54
2,025.00	3.85	170.10	2,020.66	-107.11	-19.90	-107.03	0.74	0.74	0.51
2,119.00	3.75	166.93	2,114.45	-113.21	-18.66	-113.13	0.25	-0.11	-3.37
2,213.00	3.50	165.82	2,208.26	-118.99	-17.26	-118.92	0.28	-0.27	-1.18
2,308.00	3.17	156.37	2,303.10	-124.21	-15.50	-124.14	0.67	-0.35	-9.95
2,402.00	3.13	163.59	2,396.96	-129.05	-13.73	-128.99	0.42	-0.04	7.68
2,496.00	3.25	192.25	2,490.82	-134.12	-13.57	-134.06	1.68	0.13	30.49
2,591.00	3.07	191.41	2,585.68	-139.24	-14.65	-139.18	0.20	-0.19	-0.88
2,686.00	2.86	189.10	2,680.55	-144.07	-15.53	-144.01	0.25	-0.22	-2.43
2,875.00	2.45	193.03	2,869.35	-152.67	-17.18	-152.59	0.24	-0.22	2.08
2,969.00	1.76	186.27	2,963.28	-156.06	-17.79	-155.98	0.78	-0.73	-7.19
3,063.00	2.62	180.32	3,057.21	-159.64	-17.96	-159.57	0.95	0.91	-6.33
3,158.00	2.35	179.54	3,152.12	-163.76	-17.96	-163.68	0.29	-0.28	-0.82
3,252.00	4.25	181.87	3,245.96	-169.17	-18.06	-169.09	2.03	2.02	2.48
3,346.00	4.42	181.52	3,339.70	-176.27	-18.27	-176.19	0.18	0.18	-0.37
3,441.00	4.51	181.75	3,434.41	-183.66	-18.48	-183.59	0.10	0.09	0.24
3,535.00	4.33	177.63	3,528.13	-190.90	-18.44	-190.83	0.39	-0.19	-4.38
3,629.00	3.87	184.35	3,621.89	-197.61	-18.54	-197.53	0.71	-0.49	7.15
3,723.00	3.52	201.06	3,715.69	-203.47	-19.82	-203.38	1.20	-0.37	17.78
3,817.00	3.14	202.11	3,809.54	-208.55	-21.82	-208.45	0.41	-0.40	1.12
3,912.00	2.74	186.09	3,904.41	-213.22	-23.04	-213.12	0.96	-0.42	-16.86
4,006.00	2.35	179.45	3,998.32	-217.38	-23.26	-217.28	0.52	-0.41	-7.06
4,126.00	3.99	183.82	4,118.13	-224.00	-23.52	-223.90	1.38	1.37	3.64
4,218.00	4.07	187.30	4,209.90	-230.43	-24.14	-230.33	0.28	0.09	3.78
4,312.00	3.92	193.50	4,303.68	-236.87	-25.32	-236.76	0.49	-0.16	6.60
4,406.00	2.90	195.18	4,397.51	-242.29	-26.69	-242.17	1.09	-1.09	1.79
4,500.00	2.56	191.24	4,491.40	-246.64	-27.72	-246.52	0.41	-0.36	-4.19
4,594.00	2.14	185.81	4,585.32	-250.45	-28.31	-250.33	0.51	-0.45	-5.78
4,689.00	1.22	201.15	4,680.28	-253.15	-28.85	-253.03	1.07	-0.97	16.15
4,783.00	1.15	199.31	4,774.26	-254.98	-29.53	-254.85	0.08	-0.07	-1.96
4,877.00	0.40	231.73	4,868.25	-256.07	-30.10	-255.94	0.89	-0.80	34.49
4,971.00	7.98	352.09	4,961.96	-249.80	-31.25	-249.67	8.71	8.06	128.04
5,066.00	14.89	358.27	5,055.02	-231.05	-32.53	-230.91	7.38	7.27	6.51

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<b>Well:</b>	Razor #25N-2407	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	COMPASS_ROCKIES

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,160.00	21.34	356.34	5,144.31	-201.87	-33.99	-201.73	6.89	6.86	-2.05	
5,255.00	27.41	353.37	5,230.81	-162.87	-37.62	-162.71	6.52	6.39	-3.13	
5,350.00	33.42	353.94	5,312.69	-115.09	-42.91	-114.90	6.33	6.33	0.60	
5,444.00	39.83	354.42	5,388.10	-59.32	-48.58	-59.12	6.83	6.82	0.51	
5,538.00	47.49	356.59	5,456.05	5.32	-53.57	5.55	8.30	8.15	2.31	
5,633.00	53.72	358.58	5,516.32	78.63	-56.61	78.87	6.75	6.56	2.09	
5,702.00	56.83	1.72	5,555.63	135.32	-56.43	135.56	5.86	4.51	4.55	
5,797.00	74.40	357.62	5,594.71	221.48	-57.14	221.72	18.90	18.49	-4.32	
5,821.00	79.70	356.55	5,600.09	244.83	-58.34	245.08	22.51	22.08	-4.46	
5,860.00	85.71	356.68	5,605.04	283.43	-60.62	283.68	15.41	15.41	0.33	
5,915.00	86.19	356.42	5,608.92	338.20	-63.92	338.46	0.99	0.87	-0.47	
5,965.00	88.16	357.87	5,611.39	388.07	-66.41	388.34	4.89	3.94	2.90	
6,104.00	91.54	359.64	5,611.75	527.01	-69.43	527.30	2.74	2.43	1.27	
6,198.00	91.69	1.26	5,609.10	620.97	-68.69	621.25	1.73	0.16	1.72	
6,292.00	92.41	1.61	5,605.74	714.88	-66.34	715.15	0.85	0.77	0.37	
6,387.00	91.03	2.69	5,602.89	809.76	-62.77	810.02	1.84	-1.45	1.14	
6,481.00	88.34	3.13	5,603.40	903.63	-58.00	903.87	2.90	-2.86	0.47	
6,575.00	89.23	2.39	5,605.40	997.50	-53.48	997.71	1.23	0.95	-0.79	
6,670.00	90.52	2.34	5,605.60	1,092.42	-49.56	1,092.61	1.36	1.36	-0.05	
6,764.00	91.90	1.45	5,603.62	1,186.34	-46.45	1,186.52	1.75	1.47	-0.95	
6,857.00	90.14	1.97	5,601.96	1,279.28	-43.67	1,279.45	1.97	-1.89	0.56	
6,952.00	90.32	2.61	5,601.58	1,374.20	-39.88	1,374.36	0.70	0.19	0.67	
7,046.00	88.80	1.09	5,602.30	1,468.15	-36.84	1,468.29	2.29	-1.62	-1.62	
7,141.00	89.61	0.71	5,603.62	1,563.12	-35.35	1,563.26	0.94	0.85	-0.40	
7,235.00	91.35	0.32	5,602.83	1,657.11	-34.51	1,657.24	1.90	1.85	-0.41	
7,329.00	89.40	0.52	5,602.22	1,751.10	-33.82	1,751.23	2.09	-2.07	0.21	
7,423.00	89.39	0.44	5,603.21	1,845.10	-33.03	1,845.22	0.09	-0.01	-0.09	
7,517.00	90.55	359.74	5,603.26	1,939.09	-32.88	1,939.21	1.44	1.23	-0.74	
7,612.00	88.18	359.42	5,604.31	2,034.08	-33.58	2,034.20	2.52	-2.49	-0.34	
7,706.00	88.65	359.25	5,606.91	2,128.04	-34.67	2,128.16	0.53	0.50	-0.18	
7,800.00	90.07	358.97	5,607.96	2,222.02	-36.13	2,222.15	1.54	1.51	-0.30	
7,895.00	91.57	358.84	5,606.60	2,316.99	-37.94	2,317.12	1.58	1.58	-0.14	
7,989.00	92.59	359.38	5,603.19	2,410.91	-39.40	2,411.06	1.23	1.09	0.57	
8,083.00	92.12	0.30	5,599.33	2,504.83	-39.67	2,504.97	1.10	-0.50	0.98	
8,177.00	90.56	0.73	5,597.13	2,598.80	-38.82	2,598.94	1.72	-1.66	0.46	
8,271.00	87.95	1.10	5,598.35	2,692.77	-37.32	2,692.90	2.80	-2.78	0.39	
8,366.00	88.59	1.24	5,601.22	2,787.71	-35.38	2,787.83	0.69	0.67	0.15	
8,460.00	89.67	0.66	5,602.65	2,881.68	-33.82	2,881.80	1.30	1.15	-0.62	
8,554.00	91.19	359.64	5,601.94	2,975.67	-33.58	2,975.79	1.95	1.62	-1.09	
8,649.00	89.83	359.54	5,601.10	3,070.66	-34.26	3,070.78	1.44	-1.43	-0.11	
8,743.00	90.29	359.25	5,601.00	3,164.66	-35.25	3,164.78	0.58	0.49	-0.31	
8,838.00	88.46	358.96	5,602.04	3,259.64	-36.73	3,259.76	1.95	-1.93	-0.31	
8,931.00	89.03	358.91	5,604.07	3,352.60	-38.46	3,352.73	0.62	0.61	-0.05	

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## Survey Report

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<b>Well:</b>	Razor #25N-2407	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	COMPASS_ROCKIES

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,026.00	90.17	358.32	5,604.74	3,447.57	-40.76	3,447.71	1.35	1.20	-0.62
9,120.00	91.62	358.06	5,603.27	3,541.51	-43.73	3,541.66	1.57	1.54	-0.28
9,215.00	90.29	358.48	5,601.68	3,636.45	-46.59	3,636.61	1.47	-1.40	0.44
9,309.00	91.66	358.99	5,600.08	3,730.41	-48.67	3,730.58	1.56	1.46	0.54
9,403.00	91.24	0.17	5,597.71	3,824.37	-49.36	3,824.55	1.33	-0.45	1.26
9,497.00	91.95	0.90	5,595.09	3,918.33	-48.48	3,918.50	1.08	0.76	0.78
9,592.00	90.46	3.00	5,593.09	4,013.25	-45.25	4,013.40	2.71	-1.57	2.21
9,687.00	88.59	4.23	5,593.88	4,108.05	-39.26	4,108.18	2.36	-1.97	1.29
9,781.00	88.74	3.73	5,596.07	4,201.80	-32.74	4,201.90	0.56	0.16	-0.53
9,875.00	89.81	3.45	5,597.26	4,295.60	-26.85	4,295.68	1.18	1.14	-0.30
9,970.00	89.58	3.41	5,597.76	4,390.43	-21.17	4,390.48	0.25	-0.24	-0.04
10,064.00	87.49	1.22	5,600.17	4,484.31	-17.37	4,484.35	3.22	-2.22	-2.33
10,158.00	87.27	0.47	5,604.46	4,578.20	-15.99	4,578.23	0.83	-0.23	-0.80
10,252.00	87.83	359.15	5,608.48	4,672.12	-16.30	4,672.14	1.52	0.60	-1.40
10,346.00	88.18	357.90	5,611.75	4,766.03	-18.72	4,766.06	1.38	0.37	-1.33
10,440.00	90.12	357.37	5,613.15	4,859.93	-22.59	4,859.98	2.14	2.06	-0.56
10,535.00	90.31	356.76	5,612.79	4,954.80	-27.46	4,954.88	0.67	0.20	-0.64
10,629.00	92.15	355.92	5,610.78	5,048.59	-33.46	5,048.68	2.15	1.96	-0.89
10,724.00	92.62	357.75	5,606.82	5,143.35	-38.70	5,143.47	1.99	0.49	1.93
10,818.00	92.45	0.13	5,602.66	5,237.24	-40.43	5,237.36	2.54	-0.18	2.53
10,910.00	90.48	1.33	5,600.31	5,329.20	-39.26	5,329.31	2.51	-2.14	1.30
11,002.00	90.48	1.93	5,599.54	5,421.16	-36.65	5,421.26	0.65	0.00	0.65
11,092.00	91.79	1.00	5,597.76	5,511.11	-34.34	5,511.20	1.78	1.46	-1.03
11,184.00	89.97	1.53	5,596.34	5,603.07	-32.31	5,603.15	2.06	-1.98	0.58
11,275.00	89.97	0.51	5,596.39	5,694.05	-30.69	5,694.13	1.12	0.00	-1.12
11,367.00	88.44	359.86	5,597.67	5,786.04	-30.40	5,786.12	1.81	-1.66	-0.71
11,459.00	89.47	0.37	5,599.35	5,878.02	-30.21	5,878.10	1.25	1.12	0.55
11,551.00	89.88	359.24	5,599.87	5,970.02	-30.53	5,970.09	1.31	0.45	-1.23
11,642.00	89.28	359.56	5,600.54	6,061.01	-31.48	6,061.09	0.75	-0.66	0.35
11,734.00	89.09	358.74	5,601.84	6,152.99	-32.84	6,153.07	0.91	-0.21	-0.89
11,823.00	89.35	357.23	5,603.06	6,241.92	-35.97	6,242.02	1.72	0.29	-1.70
11,914.00	89.67	357.00	5,603.83	6,332.81	-40.55	6,332.92	0.43	0.35	-0.25
12,005.00	89.40	359.12	5,604.57	6,423.75	-43.63	6,423.87	2.35	-0.30	2.33
12,096.00	91.00	2.55	5,604.26	6,514.72	-42.31	6,514.84	4.16	1.76	3.77
12,186.00	89.65	1.41	5,603.74	6,604.66	-39.20	6,604.77	1.96	-1.50	-1.27
12,278.00	90.90	1.64	5,603.30	6,696.62	-36.75	6,696.72	1.38	1.36	0.25
12,370.00	88.20	0.24	5,604.03	6,788.60	-35.24	6,788.69	3.31	-2.93	-1.52
12,462.00	88.04	359.68	5,607.04	6,880.55	-35.30	6,880.64	0.63	-0.17	-0.61
12,554.00	89.46	358.59	5,609.05	6,972.51	-36.69	6,972.60	1.95	1.54	-1.18
12,646.00	89.98	357.42	5,609.50	7,064.45	-39.89	7,064.56	1.39	0.57	-1.27
12,738.00	90.96	357.80	5,608.75	7,156.37	-43.73	7,156.49	1.14	1.07	0.41
12,830.00	91.05	356.06	5,607.13	7,248.22	-48.66	7,248.36	1.89	0.10	-1.89
12,921.00	89.87	357.19	5,606.40	7,339.06	-54.01	7,339.22	1.80	-1.30	1.24
13,013.00	88.85	358.72	5,607.43	7,430.99	-57.30	7,431.16	2.00	-1.11	1.66

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Razor #25N-2407
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Well:</b>	Razor #25N-2407	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	COMPASS_ROCKIES

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,118.00	88.63	359.39	5,609.74	7,535.95	-59.03	7,536.13	0.67	-0.21	0.64
13,196.00	88.45	358.84	5,611.73	7,613.91	-60.23	7,614.10	0.74	-0.23	-0.71
13,287.00	87.55	0.02	5,614.90	7,704.85	-61.14	7,705.04	1.63	-0.99	1.30
13,379.00	87.85	359.76	5,618.59	7,796.78	-61.31	7,796.96	0.43	0.33	-0.28
13,470.00	89.04	359.62	5,621.06	7,887.74	-61.81	7,887.93	1.32	1.31	-0.15
13,562.00	89.92	358.90	5,621.90	7,979.73	-62.99	7,979.92	1.24	0.96	-0.78
13,654.00	91.05	359.16	5,621.12	8,071.71	-64.55	8,071.91	1.26	1.23	0.28
13,745.00	90.58	1.63	5,619.82	8,162.69	-63.92	8,162.89	2.76	-0.52	2.71
13,837.00	88.09	2.13	5,620.89	8,254.63	-60.91	8,254.81	2.76	-2.71	0.54
13,929.00	86.93	359.16	5,624.89	8,346.52	-59.87	8,346.70	3.46	-1.26	-3.23
14,020.00	87.03	357.32	5,629.68	8,437.35	-62.66	8,437.54	2.02	0.11	-2.02
14,110.00	87.57	357.46	5,633.92	8,527.15	-66.76	8,527.36	0.62	0.60	0.16
14,202.00	88.63	359.81	5,636.97	8,619.07	-68.95	8,619.28	2.80	1.15	2.55
14,293.00	87.85	1.36	5,639.77	8,710.02	-68.02	8,710.23	1.91	-0.86	1.70
14,384.00	88.15	1.27	5,642.95	8,800.94	-65.93	8,801.14	0.34	0.33	-0.10
14,475.00	89.68	0.56	5,644.67	8,891.91	-64.48	8,892.10	1.85	1.68	-0.78
14,567.00	90.22	0.33	5,644.75	8,983.91	-63.76	8,984.09	0.64	0.59	-0.25
14,658.00	91.05	359.75	5,643.74	9,074.90	-63.70	9,075.09	1.11	0.91	-0.64
14,750.00	90.98	358.80	5,642.11	9,166.88	-64.86	9,167.07	1.04	-0.08	-1.03
14,841.00	92.20	0.30	5,639.59	9,257.83	-65.58	9,258.03	2.12	1.34	1.65
14,933.00	92.80	0.36	5,635.57	9,349.74	-65.05	9,349.93	0.66	0.65	0.07
15,025.00	90.43	0.68	5,632.98	9,441.70	-64.21	9,441.88	2.60	-2.58	0.35
15,117.00	90.45	0.42	5,632.27	9,533.69	-63.33	9,533.87	0.28	0.02	-0.28
15,208.00	90.20	359.64	5,631.76	9,624.69	-63.28	9,624.87	0.90	-0.27	-0.86
15,299.00	90.05	2.43	5,631.56	9,715.66	-61.64	9,715.84	3.07	-0.16	3.07
15,390.00	89.70	1.32	5,631.76	9,806.61	-58.66	9,806.77	1.28	-0.38	-1.22
15,482.00	89.93	0.49	5,632.05	9,898.60	-57.21	9,898.75	0.94	0.25	-0.90
15,573.00	91.35	1.84	5,631.04	9,989.57	-55.36	9,989.72	2.15	1.56	1.48
15,665.00	91.34	0.13	5,628.88	10,081.53	-53.78	10,081.67	1.86	-0.01	-1.86
15,680.00	91.28	0.00	5,628.54	10,096.52	-53.76	10,096.66	0.95	-0.40	-0.87
15,740.00	91.28	0.00	5,627.19	10,156.51	-53.76	10,156.65	0.00	0.00	0.00

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	WHITING PETROLEUM CORP.	<b>Local Co-ordinate Reference:</b>	Well Razor #25N-2407
<b>Project:</b>	Weld County, CO	<b>TVD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Site:</b>	Sec 25-T10N-R58W	<b>MD Reference:</b>	KBE @ 4722.00usft (Original Well Elev)
<b>Well:</b>	Razor #25N-2407	<b>North Reference:</b>	True
<b>Wellbore:</b>	Original Hole	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Original Hole	<b>Database:</b>	COMPASS_ROCKIES

### Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SL 2407 - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,539,962.20	3,466,449.16	40.803414°N	103.815072°W
600' Entry 2407 - actual wellpath misses target center by 0.01usft at 5821.00usft MD (5600.09 TVD, 244.83 N, -58.34 E) - Point	0.00	0.00	5,600.09	244.83	-58.34	1,540,205.87	3,466,386.17	40.804086°N	103.815283°W
PBHL 2407 p2 - actual wellpath misses target center by 20.31usft at 15740.00usft MD (5627.19 TVD, 10156.51 N, -53.76 E) - Point	0.00	0.00	5,610.00	10,158.01	-43.05	1,550,117.55	3,466,213.11	40.831295°N	103.815228°W
7' Casing PT 2407 - actual wellpath misses target center by 0.01usft at 5965.00usft MD (5611.39 TVD, 388.07 N, -66.41 E) - Point	0.00	0.00	5,611.39	388.07	-66.41	1,540,348.93	3,466,375.38	40.804479°N	103.815312°W
BHL 2407 - actual wellpath hits target center - Point	0.00	0.00	5,627.19	10,156.51	-53.76	1,550,115.85	3,466,202.43	40.831290°N	103.815267°W

### Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
5,821.00	5,600.09	244.83	-58.34	600' Entry
5,965.00	5,611.39	388.07	-66.41	7' Casing PT

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_