



**WELLBORE TARGET DETAILS**

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Surface 19N-33HZ	0.00	0.00	0.00	14588357.39	1669161.27	40.169183°N	104.897105°W	Point
KOP 19N-33HZ	6536.31	-822.42	-828.24	14587534.01	1668333.99	40.166925°N	104.900070°W	Point
BHL 19N-33HZ	7166.00	4294.58	-856.04	14592650.97	1668300.25	40.180976°N	104.900170°W	Point
PBHL 19N-33HZ	7179.00	4307.93	-832.07	14592664.36	1668324.21	40.181013°N	104.900084°W	Point
460' Toe Entry 19N-33HZ	7198.83	3019.32	-842.85	14591375.73	1668314.93	40.177474°N	104.900122°W	Point
460' Heel Exit 19N-33HZ	7204.98	1186.06	-839.73	14589542.47	1668320.17	40.172440°N	104.900111°W	Point
Land Box Entry 19N-33HZ	7212.52	-203.02	-843.37	14588153.40	1668318.14	40.168625°N	104.900124°W	Point
Landing Point 19N-33HZ	7222.10	-23.47	-846.35	14588332.95	1668314.94	40.169119°N	104.900135°W	Point

# Precision Drilling Corporation

## Survey Report

<b>Company:</b> US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b> Well Babcock 19N-33HZ
<b>Project:</b> WELD-NAD83-UTMFT13N	<b>TVD Reference:</b> 4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Site:</b> 3N-67W-33 Babcock 6-4HZ Pad	<b>MD Reference:</b> 4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Well:</b> Babcock 19N-33HZ	<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> Local Database

<b>Project</b> WELD-NAD83-UTMFT13N	
<b>Map System:</b> Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b> Mean Sea Level
<b>Geo Datum:</b> North American Datum 1983	
<b>Map Zone:</b> Zone 13N (108 W to 102 W)	

<b>Site</b> 3N-67W-33 Babcock 6-4HZ Pad		
<b>Site Position:</b>	<b>Northing:</b> 14,588,357.65 usft	<b>Latitude:</b> 40.169184°N
<b>From:</b> Lat/Long	<b>Easting:</b> 1,669,071.31 usft	<b>Longitude:</b> 104.897427°W
<b>Position Uncertainty:</b> 0.00 usft	<b>Slot Radius:</b> 13.20 in	<b>Grid Convergence:</b> 0.07 °

<b>Well</b> Babcock 19N-33HZ		
<b>Well Position</b> +N/-S 0.00 usft	<b>Northing:</b> 14,588,357.39 usft	<b>Latitude:</b> 40.169183°N
+E/-W 0.00 usft	<b>Easting:</b> 1,669,161.27 usft	<b>Longitude:</b> 104.897105°W
<b>Position Uncertainty</b> 3.28 usft	<b>Wellhead Elevation:</b> 0.00 usft	<b>Ground Level:</b> 4,886.00 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	04/04/16	8.27	66.68	52,490

<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	0.00	

<b>Survey Program</b>		<b>Date</b> 06/12/17		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
9.00	1,817.00	Survey #1 (Original Hole)	APC_ISCWSA REV 2 MV Fixed:v2:crustal field declination	
1,926.00	12,127.00	Survey #2 (Original Hole)	APC_ISCWSA REV 2 MV Fixed:v2:crustal field declination	
12,186.00	12,186.00	Survey #3 (Original Hole)	APC_BLIND	OWSG BLIND

<b>Survey</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.00	0.00	0.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
174.00	0.31	91.49	174.00	-0.01	0.45	-0.01	0.19	0.19	0.00	
291.00	0.55	208.47	291.00	-0.51	0.49	-0.51	0.64	0.21	99.98	
469.00	2.99	230.51	468.90	-4.22	-3.50	-4.22	1.40	1.37	12.38	
554.00	4.28	225.23	553.73	-7.86	-7.46	-7.86	1.57	1.52	-6.21	
640.00	5.27	224.12	639.43	-12.96	-12.49	-12.96	1.16	1.15	-1.29	
729.00	6.60	223.54	727.95	-19.60	-18.86	-19.60	1.50	1.49	-0.65	
816.00	7.91	222.93	814.25	-27.61	-26.38	-27.61	1.51	1.51	-0.70	

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Babcock 19N-33HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Site:</b>	3N-67W-33 Babcock 6-4HZ Pad	<b>MD Reference:</b>	4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Well:</b>	Babcock 19N-33HZ	<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>	Local Database

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)	
989.00	11.48	219.19	984.75	-49.67	-45.37	-49.67	2.09	2.06	-2.16	
1,078.00	13.02	223.43	1,071.73	-63.82	-57.86	-63.82	2.00	1.73	4.76	
1,166.00	14.00	222.44	1,157.29	-78.87	-71.86	-78.87	1.14	1.11	-1.13	
1,255.00	15.24	224.73	1,243.41	-95.13	-87.36	-95.13	1.54	1.39	2.57	
1,344.00	15.24	225.57	1,329.28	-111.63	-103.94	-111.63	0.25	0.00	0.94	
1,430.00	14.73	227.51	1,412.35	-126.93	-120.07	-126.93	0.83	-0.59	2.26	
1,517.00	13.06	228.10	1,496.81	-140.96	-135.55	-140.96	1.93	-1.92	0.68	
1,604.00	12.75	225.98	1,581.61	-154.20	-149.77	-154.20	0.65	-0.36	-2.44	
1,692.00	13.13	226.98	1,667.37	-167.77	-164.06	-167.77	0.50	0.43	1.14	
1,781.00	13.01	225.39	1,754.07	-181.70	-178.58	-181.70	0.43	-0.13	-1.79	
1,817.00	12.93	226.94	1,789.15	-187.29	-184.41	-187.29	0.99	-0.22	4.31	
1,926.00	12.77	225.21	1,895.42	-204.11	-201.87	-204.11	0.38	-0.15	-1.59	
2,016.00	13.67	222.48	1,983.03	-218.96	-216.11	-218.96	1.22	1.00	-3.03	
2,105.00	15.10	230.74	2,069.25	-234.05	-232.19	-234.05	2.81	1.61	9.28	
2,195.00	16.22	226.09	2,155.91	-250.19	-250.32	-250.19	1.87	1.24	-5.17	
2,285.00	16.79	227.58	2,242.20	-267.68	-268.98	-267.68	0.79	0.63	1.66	
2,374.00	18.90	224.06	2,326.92	-286.71	-288.49	-286.71	2.66	2.37	-3.96	
2,464.00	18.96	220.37	2,412.06	-308.32	-308.10	-308.32	1.33	0.07	-4.10	
2,553.00	19.47	221.95	2,496.10	-330.37	-327.38	-330.37	0.82	0.57	1.78	
2,643.00	18.55	218.35	2,581.19	-352.75	-346.29	-352.75	1.66	-1.02	-4.00	
2,733.00	17.87	224.06	2,666.69	-373.91	-364.78	-373.91	2.12	-0.76	6.34	
2,822.00	18.85	228.37	2,751.16	-393.27	-385.02	-393.27	1.88	1.10	4.84	
2,912.00	18.68	228.90	2,836.38	-412.41	-406.75	-412.41	0.27	-0.19	0.59	
3,002.00	18.17	231.89	2,921.77	-430.54	-428.65	-430.54	1.19	-0.57	3.32	
3,091.00	17.82	229.60	3,006.41	-447.93	-449.94	-447.93	0.89	-0.39	-2.57	
3,181.00	20.26	236.63	3,091.50	-465.43	-473.45	-465.43	3.72	2.71	7.81	
3,271.00	18.35	233.82	3,176.43	-482.37	-497.90	-482.37	2.36	-2.12	-3.12	
3,360.00	17.25	231.10	3,261.17	-498.93	-519.48	-498.93	1.55	-1.24	-3.06	
3,450.00	18.04	227.32	3,346.94	-516.75	-540.11	-516.75	1.55	0.88	-4.20	
3,539.00	18.59	228.63	3,431.43	-535.47	-560.89	-535.47	0.77	0.62	1.47	
3,629.00	18.35	227.67	3,516.80	-554.49	-582.13	-554.49	0.43	-0.27	-1.07	
3,718.00	19.03	227.14	3,601.10	-573.80	-603.12	-573.80	0.79	0.76	-0.60	
3,808.00	19.93	225.56	3,685.95	-594.52	-624.83	-594.52	1.16	1.00	-1.76	
3,898.00	19.82	225.73	3,770.59	-615.91	-646.71	-615.91	0.14	-0.12	0.19	
3,987.00	19.36	222.31	3,854.44	-637.35	-667.44	-637.35	1.39	-0.52	-3.84	
4,077.00	20.06	221.16	3,939.17	-660.01	-687.64	-660.01	0.89	0.78	-1.28	
4,167.00	18.55	219.93	4,024.11	-682.61	-706.99	-682.61	1.74	-1.68	-1.37	
4,256.00	17.21	218.70	4,108.81	-703.74	-724.31	-703.74	1.56	-1.51	-1.38	
4,346.00	14.66	215.27	4,195.34	-723.43	-739.21	-723.43	3.02	-2.83	-3.81	
4,436.00	13.23	213.34	4,282.69	-741.33	-751.45	-741.33	1.67	-1.59	-2.14	
4,548.00	11.80	212.29	4,392.02	-761.72	-764.61	-761.72	1.29	-1.28	-0.94	
4,638.00	11.43	210.35	4,480.18	-777.20	-774.04	-777.20	0.60	-0.41	-2.16	
4,728.00	9.56	219.23	4,568.68	-790.68	-783.27	-790.68	2.74	-2.08	9.87	

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Babcock 19N-33HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Site:</b>	3N-67W-33 Babcock 6-4HZ Pad	<b>MD Reference:</b>	4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Well:</b>	Babcock 19N-33HZ	<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>	Local Database

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)
4,817.00	8.64	217.65	4,656.56	-801.70	-792.03	-801.70	1.07	-1.03	-1.78
4,907.00	5.60	220.64	4,745.85	-810.39	-799.02	-810.39	3.40	-3.38	3.32
4,997.00	5.01	222.13	4,835.47	-816.64	-804.51	-816.64	0.67	-0.66	1.66
5,086.00	4.94	222.66	4,924.13	-822.34	-809.72	-822.34	0.09	-0.08	0.60
5,176.00	3.69	222.39	5,013.87	-827.32	-814.30	-827.32	1.39	-1.39	-0.30
5,266.00	3.45	240.94	5,103.70	-830.78	-818.62	-830.78	1.30	-0.27	20.61
5,355.00	2.46	287.17	5,192.59	-831.52	-822.78	-831.52	2.80	-1.11	51.94
5,445.00	0.29	243.40	5,282.56	-831.05	-824.83	-831.05	2.51	-2.41	-48.63
5,534.00	0.44	270.12	5,371.56	-831.15	-825.38	-831.15	0.25	0.17	30.02
5,624.00	0.40	299.21	5,461.56	-830.99	-826.00	-830.99	0.24	-0.04	32.32
5,714.00	0.68	304.92	5,551.56	-830.53	-826.71	-830.53	0.32	0.31	6.34
5,803.00	1.08	144.79	5,640.55	-830.92	-826.66	-830.92	1.95	0.45	-179.92
5,893.00	1.36	120.62	5,730.53	-832.15	-825.25	-832.15	0.64	0.31	-26.86
5,982.00	0.70	58.04	5,819.52	-832.40	-823.88	-832.40	1.36	-0.74	-70.31
6,072.00	1.21	57.42	5,909.51	-831.60	-822.61	-831.60	0.57	0.57	-0.69
6,162.00	1.56	65.16	5,999.48	-830.58	-820.70	-830.58	0.44	0.39	8.60
6,251.00	1.01	13.48	6,088.46	-829.30	-819.42	-829.30	1.38	-0.62	-58.07
6,341.00	1.71	297.10	6,178.44	-827.92	-820.43	-827.92	1.97	0.78	-84.87
6,431.00	1.63	302.20	6,268.40	-826.63	-822.71	-826.63	0.19	-0.09	5.67
6,520.00	1.56	299.12	6,357.37	-825.36	-824.84	-825.36	0.12	-0.08	-3.46
6,610.00	1.23	304.22	6,447.34	-824.22	-826.70	-824.22	0.39	-0.37	5.67
6,699.00	1.89	329.62	6,536.31	-822.42	-828.24	-822.42	1.06	0.74	28.54
<b>KOP</b>									
6,789.00	14.06	0.29	6,625.29	-810.16	-828.93	-810.16	13.86	13.52	34.08
6,879.00	21.01	357.75	6,711.05	-783.07	-829.51	-783.07	7.77	7.72	-2.82
6,969.00	25.95	356.16	6,793.58	-747.28	-831.47	-747.28	5.53	5.49	-1.77
7,058.00	30.85	358.19	6,871.84	-705.02	-833.49	-705.02	5.61	5.51	2.28
7,148.00	34.48	357.13	6,947.60	-656.49	-835.50	-656.49	4.08	4.03	-1.18
7,238.00	46.43	356.43	7,015.96	-598.30	-838.82	-598.30	13.29	13.28	-0.78
7,328.00	54.08	357.31	7,073.46	-529.25	-842.56	-529.25	8.53	8.50	0.98
7,417.00	60.04	0.73	7,121.84	-454.62	-843.76	-454.62	7.43	6.70	3.84
7,507.00	66.72	0.82	7,162.14	-374.21	-842.67	-374.21	7.42	7.42	0.10
7,597.00	72.89	359.94	7,193.20	-289.79	-842.13	-289.79	6.92	6.86	-0.98
7,686.00	82.01	358.45	7,212.52	-203.02	-843.37	-203.02	10.38	10.25	-1.67
<b>Land Box Entry</b>									
7,776.00	87.88	358.54	7,220.45	-113.44	-845.72	-113.44	6.52	6.52	0.10
7,866.00	90.01	0.65	7,222.10	-23.47	-846.35	-23.47	3.33	2.37	2.34
<b>Landing Point</b>									
7,955.00	88.89	0.65	7,222.96	65.52	-845.34	65.52	1.26	-1.26	0.00
8,045.00	90.63	1.70	7,223.33	155.50	-843.50	155.50	2.26	1.93	1.17
8,134.00	90.93	0.73	7,222.12	244.47	-841.61	244.47	1.14	0.34	-1.09
8,224.00	90.58	0.47	7,220.94	334.45	-840.67	334.45	0.48	-0.39	-0.29
8,314.00	93.04	1.17	7,218.09	424.39	-839.38	424.39	2.84	2.73	0.78
8,403.00	92.45	1.09	7,213.83	513.27	-837.63	513.27	0.67	-0.66	-0.09

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Babcock 19N-33HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Site:</b>	3N-67W-33 Babcock 6-4HZ Pad	<b>MD Reference:</b>	4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Well:</b>	Babcock 19N-33HZ	<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>	Local Database

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)	
8,493.00	92.47	0.73	7,209.97	603.18	-836.20	603.18	0.40	0.02	-0.40	
8,585.00	90.89	0.56	7,207.27	695.13	-835.17	695.13	1.73	-1.72	-0.18	
8,675.00	90.03	0.29	7,206.55	785.12	-834.50	785.12	1.00	-0.96	-0.30	
8,764.00	90.16	359.24	7,206.40	874.12	-834.86	874.12	1.19	0.15	-1.18	
8,854.00	91.31	358.36	7,205.25	964.09	-836.75	964.09	1.61	1.28	-0.98	
8,944.00	90.10	359.77	7,204.14	1,054.07	-838.22	1,054.07	2.06	-1.34	1.57	
9,033.00	89.46	359.24	7,204.48	1,143.07	-838.99	1,143.07	0.93	-0.72	-0.60	
9,076.00	89.20	358.78	7,204.98	1,186.06	-839.73	1,186.06	1.24	-0.61	-1.08	
<b>460' Heel Exit</b>										
9,123.00	88.91	358.27	7,205.76	1,233.03	-840.94	1,233.03	1.24	-0.61	-1.08	
9,213.00	90.12	359.68	7,206.52	1,323.01	-842.55	1,323.01	2.06	1.34	1.57	
9,302.00	89.66	358.18	7,206.69	1,411.99	-844.21	1,411.99	1.76	-0.52	-1.69	
9,392.00	90.87	359.24	7,206.28	1,501.97	-846.24	1,501.97	1.79	1.34	1.18	
9,482.00	90.91	359.42	7,204.88	1,591.95	-847.29	1,591.95	0.20	0.04	0.20	
9,571.00	91.90	0.73	7,202.70	1,680.92	-847.18	1,680.92	1.84	1.11	1.47	
9,661.00	91.73	0.12	7,199.85	1,770.87	-846.51	1,770.87	0.70	-0.19	-0.68	
9,751.00	91.62	2.49	7,197.22	1,860.80	-844.46	1,860.80	2.64	-0.12	2.63	
9,840.00	91.70	2.05	7,194.64	1,949.70	-840.94	1,949.70	0.50	0.09	-0.49	
9,930.00	91.15	1.79	7,192.40	2,039.62	-837.92	2,039.62	0.68	-0.61	-0.29	
10,020.00	89.22	1.79	7,192.11	2,129.57	-835.11	2,129.57	2.14	-2.14	0.00	
10,110.00	88.89	1.09	7,193.59	2,219.53	-832.85	2,219.53	0.86	-0.37	-0.78	
10,199.00	88.45	0.47	7,195.66	2,308.49	-831.64	2,308.49	0.85	-0.49	-0.70	
10,289.00	89.73	359.94	7,197.09	2,398.48	-831.32	2,398.48	1.54	1.42	-0.59	
10,379.00	89.68	359.24	7,197.55	2,488.48	-831.96	2,488.48	0.78	-0.06	-0.78	
10,468.00	89.66	359.24	7,198.06	2,577.47	-833.14	2,577.47	0.02	-0.02	0.00	
10,558.00	89.68	358.62	7,198.58	2,667.45	-834.82	2,667.45	0.69	0.02	-0.69	
10,648.00	89.09	357.83	7,199.55	2,757.40	-837.61	2,757.40	1.10	-0.66	-0.88	
10,737.00	89.57	358.89	7,200.59	2,846.36	-840.15	2,846.36	1.31	0.54	1.19	
10,827.00	90.91	359.24	7,200.21	2,936.34	-841.62	2,936.34	1.54	1.49	0.39	
10,910.00	90.99	359.07	7,198.83	3,019.32	-842.85	3,019.32	0.23	0.10	-0.20	
<b>460' Toe Entry</b>										
10,916.00	91.00	359.06	7,198.73	3,025.32	-842.94	3,025.32	0.23	0.10	-0.20	
11,006.00	90.14	357.31	7,197.83	3,115.26	-845.79	3,115.26	2.17	-0.96	-1.94	
11,096.00	91.04	358.45	7,196.91	3,205.20	-849.12	3,205.20	1.61	1.00	1.27	
11,185.00	91.22	359.50	7,195.15	3,294.16	-850.71	3,294.16	1.20	0.20	1.18	
11,275.00	90.49	0.65	7,193.81	3,384.15	-850.60	3,384.15	1.51	-0.81	1.28	
11,365.00	90.16	359.15	7,193.30	3,474.15	-850.75	3,474.15	1.71	-0.37	-1.67	
11,454.00	90.91	358.62	7,192.47	3,563.12	-852.49	3,563.12	1.03	0.84	-0.60	
11,544.00	91.02	359.86	7,190.95	3,653.10	-853.68	3,653.10	1.38	0.12	1.38	
11,634.00	91.99	0.82	7,188.59	3,743.07	-853.15	3,743.07	1.52	1.08	1.07	
11,724.00	92.19	359.94	7,185.31	3,833.00	-852.55	3,833.00	1.00	0.22	-0.98	
11,813.00	92.69	359.24	7,181.52	3,921.92	-853.19	3,921.92	0.97	0.56	-0.79	
11,903.00	92.47	359.24	7,177.46	4,011.82	-854.38	4,011.82	0.24	-0.24	0.00	
11,992.00	91.62	359.94	7,174.29	4,100.76	-855.01	4,100.76	1.24	-0.96	0.79	

# Precision Drilling Corporation

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Babcock 19N-33HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Site:</b>	3N-67W-33 Babcock 6-4HZ Pad	<b>MD Reference:</b>	4886'GL + 21'KB @ 4907.00usft (PD464)
<b>Well:</b>	Babcock 19N-33HZ	<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>	Local Database

### 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)
12,082.00	92.52	359.77	7,171.04	4,190.70	-855.24	4,190.70	1.02	1.00	-0.19
12,127.00	92.85	359.50	7,168.93	4,235.65	-855.53	4,235.65	0.95	0.73	-0.60
12,186.00	92.85	359.50	7,166.00	4,294.58	-856.04	4,294.58	0.00	0.00	0.00

### 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
Surface 19N-33HZ - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,588,357.39	1,669,161.27	40.169183°N	104.897105°W
KOP 19N-33HZ - actual wellpath hits target center - Point	0.00	0.00	6,536.31	-822.42	-828.24	14,587,534.01	1,668,333.98	40.166925°N	104.900070°W
BHL 19N-33HZ - actual wellpath hits target center - Point	0.00	0.00	7,166.00	4,294.58	-856.04	14,592,650.97	1,668,300.25	40.180976°N	104.900170°W
PBHL 19N-33HZ - actual wellpath misses target center by 30.37usft at 12186.00usft MD (7166.00 TVD, 4294.58 N, -856.04 E) - Point	0.00	0.00	7,179.00	4,307.93	-832.07	14,592,664.35	1,668,324.21	40.181013°N	104.900084°W
460' Toe Entry 19N-33 - actual wellpath hits target center - Point	0.00	0.00	7,198.83	3,019.32	-842.85	14,591,375.73	1,668,314.92	40.177474°N	104.900123°W
460' Heel Exit 19N-33 - actual wellpath hits target center - Point	0.00	0.00	7,204.98	1,186.06	-839.73	14,589,542.47	1,668,320.16	40.172440°N	104.900111°W
Land Box Entry 19N-33 - actual wellpath hits target center - Point	0.00	0.00	7,212.52	-203.02	-843.37	14,588,153.39	1,668,318.14	40.168626°N	104.900124°W
Landing Point 19N-33 - actual wellpath hits target center - Point	0.00	0.00	7,222.10	-23.47	-846.35	14,588,332.94	1,668,314.94	40.169119°N	104.900135°W

### Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
6,699.00	6,536.31	-822.42	-828.24	KOP
7,686.00	7,212.52	-203.02	-843.37	Land Box Entry
7,866.00	7,222.10	-23.47	-846.35	Landing Point
9,076.00	7,204.98	1,186.06	-839.73	460' Heel Exit
10,910.00	7,198.83	3,019.32	-842.85	460' Toe Entry