

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**3N-68W-22 Hilgers 16-22HZ Pad**

**HILGERS 13N-22HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

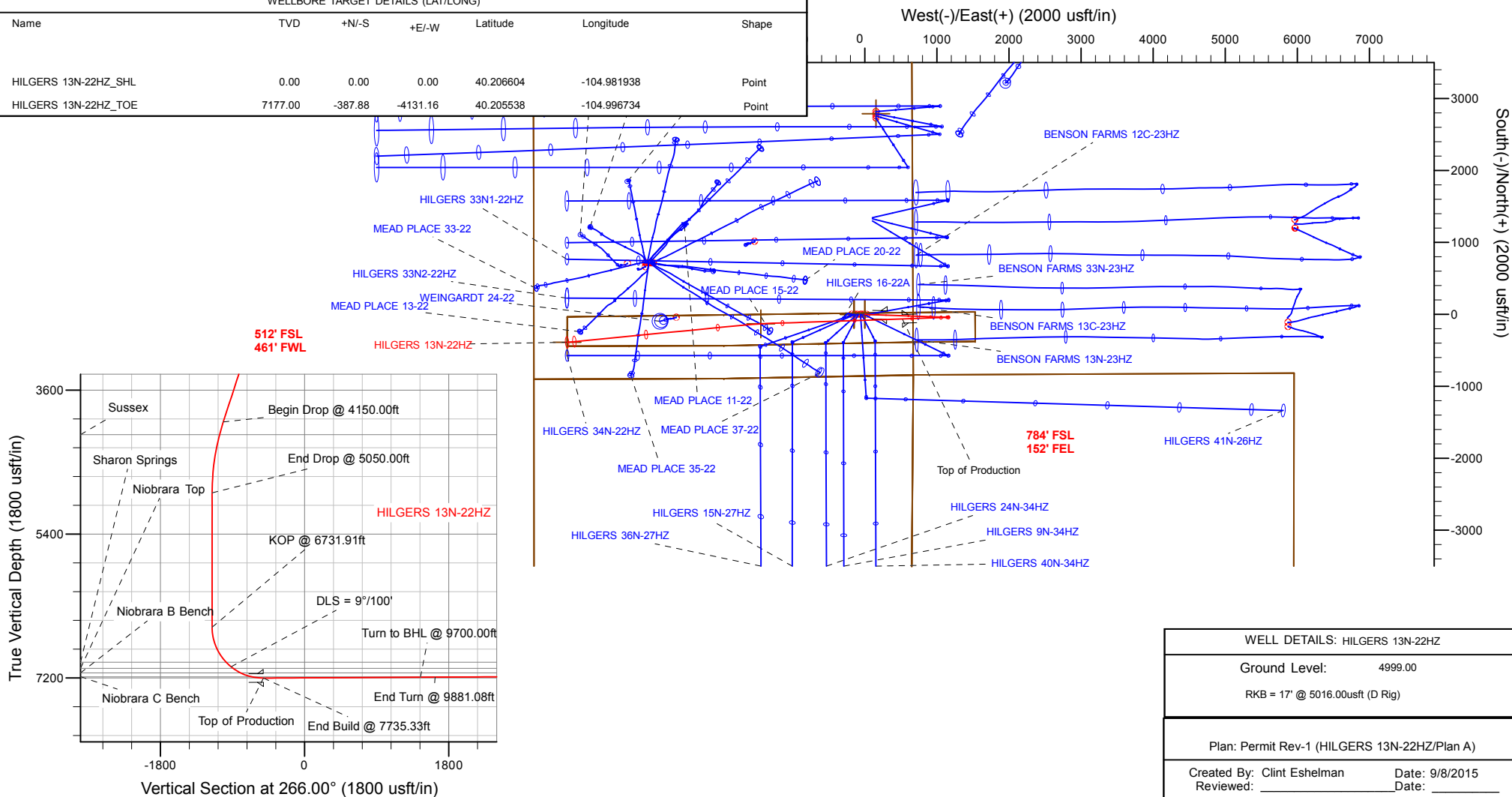
**08 September, 2015**

Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1450.00	18.00	92.00	1430.36	-6.52	186.84	1.50	92.00	-185.93	
4	4150.00	18.00	92.00	3998.21	-35.64	1020.67	0.00	0.00	-1015.70	
5	5050.00	0.00	0.00	4883.48	-40.54	1160.80	2.00	180.00	-1155.15	
6	6731.91	0.00	0.00	6565.39	-40.54	1160.80	0.00	0.00	-1155.15	
7	7735.33	90.31	268.03	7202.00	-62.58	521.14	9.00	268.03	-515.51	
8	9700.00	90.31	268.03	7191.45	-130.23	-1442.34	0.00	0.00	1447.91	HILGERS 13N-22HZ_Lateral Target
9	9881.08	90.31	264.41	7190.48	-142.18	-1622.98	2.00	-90.01	1628.95	
10	12401.29	90.31	264.41	7177.00	-387.88	-4131.16	0.00	0.00	4148.15	HILGERS 13N-22HZ_TOE

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HILGERS 13N-22HZ_SHL	0.00	0.00	0.00	40.206604	-104.981938	Point
HILGERS 13N-22HZ_TOE	7177.00	-387.88	-4131.16	40.205538	-104.996734	Point



# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 13N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 16-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 13N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

<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)		

Site		3N-68W-22 Hilgers 16-22HZ Pad			
Site Position:		Northing:	14,601,968.89 usft	Latitude:	40.206606
From:	Lat/Long	Easting:	1,645,309.73 usft	Longitude:	-104.982475
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.01 °

Well	HILGERS 13N-22HZ					
Well Position	+N/-S	-0.73 usft	Northing:	14,601,968.20 usft	Latitude:	40.206604
	+E/-W	149.93 usft	Easting:	1,645,459.67 usft	Longitude:	-104.981938
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,999.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/6/2015	8.39	66.71	52,561

<b>Design</b>	Permit Rev-1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	266.00

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,450.00	18.00	92.00	1,430.36	-6.52	186.84	1.50	1.50	0.00	92.00	
4,150.00	18.00	92.00	3,998.21	-35.64	1,020.67	0.00	0.00	0.00	0.00	
5,050.00	0.00	0.00	4,883.48	-40.54	1,160.80	2.00	-2.00	0.00	180.00	
6,731.91	0.00	0.00	6,565.39	-40.54	1,160.80	0.00	0.00	0.00	0.00	
7,735.33	90.31	268.03	7,202.00	-62.58	521.14	9.00	9.00	-9.17	268.03	
9,700.00	90.31	268.03	7,191.45	-130.23	-1,442.34	0.00	0.00	0.00	0.00	HILGERS 13N-22HZ_
9,881.08	90.31	264.41	7,190.48	-142.18	-1,622.98	2.00	0.00	-2.00	-90.01	
12,401.29	90.31	264.41	7,177.00	-387.88	-4,131.16	0.00	0.00	0.00	0.00	HILGERS 13N-22HZ_

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 13N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 16-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 13N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft									
300.00	0.75	92.00	300.00	-0.01	0.33	-0.33	1.50	1.50	0.00
316.00	0.99	92.00	316.00	-0.02	0.57	-0.57	1.50	1.50	0.00
Fox Hills									
400.00	2.25	92.00	399.96	-0.10	2.94	-2.93	1.50	1.50	0.00
500.00	3.75	92.00	499.82	-0.29	8.17	-8.13	1.50	1.50	0.00
600.00	5.25	92.00	599.51	-0.56	16.01	-15.94	1.50	1.50	0.00
700.00	6.75	92.00	698.96	-0.92	26.46	-26.33	1.50	1.50	0.00
800.00	8.25	92.00	798.10	-1.38	39.50	-39.31	1.50	1.50	0.00
900.00	9.75	92.00	896.87	-1.93	55.14	-54.87	1.50	1.50	0.00
1,000.00	11.25	92.00	995.19	-2.56	73.35	-72.99	1.50	1.50	0.00
1,100.00	12.75	92.00	1,093.00	-3.29	94.13	-93.67	1.50	1.50	0.00
1,200.00	14.25	92.00	1,190.24	-4.10	117.46	-116.89	1.50	1.50	0.00
1,300.00	15.75	92.00	1,286.83	-5.00	143.32	-142.62	1.50	1.50	0.00
1,400.00	17.25	92.00	1,382.71	-6.00	171.71	-170.87	1.50	1.50	0.00
1,450.00	18.00	92.00	1,430.36	-6.52	186.84	-185.93	1.50	1.50	0.00
End Nudge @ 1450.00ft									
1,500.00	18.00	92.00	1,477.91	-7.06	202.28	-201.29	0.00	0.00	0.00
1,600.00	18.00	92.00	1,573.02	-8.14	233.16	-232.02	0.00	0.00	0.00
1,700.00	18.00	92.00	1,668.12	-9.22	264.04	-262.76	0.00	0.00	0.00
1,800.00	18.00	92.00	1,763.23	-10.30	294.93	-293.49	0.00	0.00	0.00
1,838.66	18.00	92.00	1,800.00	-10.72	306.87	-305.37	0.00	0.00	0.00
9 5/8"									
1,900.00	18.00	92.00	1,858.33	-11.38	325.81	-324.22	0.00	0.00	0.00
2,000.00	18.00	92.00	1,953.44	-12.46	356.69	-354.95	0.00	0.00	0.00
2,100.00	18.00	92.00	2,048.54	-13.53	387.58	-385.69	0.00	0.00	0.00
2,200.00	18.00	92.00	2,143.65	-14.61	418.46	-416.42	0.00	0.00	0.00
2,300.00	18.00	92.00	2,238.76	-15.69	449.34	-447.15	0.00	0.00	0.00
2,400.00	18.00	92.00	2,333.86	-16.77	480.22	-477.88	0.00	0.00	0.00
2,500.00	18.00	92.00	2,428.97	-17.85	511.11	-508.62	0.00	0.00	0.00
2,600.00	18.00	92.00	2,524.07	-18.93	541.99	-539.35	0.00	0.00	0.00
2,700.00	18.00	92.00	2,619.18	-20.01	572.87	-570.08	0.00	0.00	0.00
2,800.00	18.00	92.00	2,714.28	-21.08	603.76	-600.81	0.00	0.00	0.00
2,900.00	18.00	92.00	2,809.39	-22.16	634.64	-631.55	0.00	0.00	0.00
3,000.00	18.00	92.00	2,904.50	-23.24	665.52	-662.28	0.00	0.00	0.00
3,100.00	18.00	92.00	2,999.60	-24.32	696.40	-693.01	0.00	0.00	0.00
3,200.00	18.00	92.00	3,094.71	-25.40	727.29	-723.74	0.00	0.00	0.00
3,300.00	18.00	92.00	3,189.81	-26.48	758.17	-754.48	0.00	0.00	0.00
3,400.00	18.00	92.00	3,284.92	-27.55	789.05	-785.21	0.00	0.00	0.00
3,500.00	18.00	92.00	3,380.02	-28.63	819.94	-815.94	0.00	0.00	0.00
3,600.00	18.00	92.00	3,475.13	-29.71	850.82	-846.67	0.00	0.00	0.00
3,700.00	18.00	92.00	3,570.24	-30.79	881.70	-877.41	0.00	0.00	0.00
3,800.00	18.00	92.00	3,665.34	-31.87	912.58	-908.14	0.00	0.00	0.00
3,900.00	18.00	92.00	3,760.45	-32.95	943.47	-938.87	0.00	0.00	0.00
4,000.00	18.00	92.00	3,855.55	-34.03	974.35	-969.60	0.00	0.00	0.00
4,100.00	18.00	92.00	3,950.66	-35.10	1,005.23	-1,000.34	0.00	0.00	0.00
4,150.00	18.00	92.00	3,998.21	-35.64	1,020.67	-1,015.70	0.00	0.00	0.00
Begin Drop @ 4150.00ft									
4,200.00	17.00	92.00	4,045.90	-36.17	1,035.70	-1,030.65	2.00	-2.00	0.00
4,300.00	15.00	92.00	4,142.02	-37.13	1,063.25	-1,058.07	2.00	-2.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 13N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 16-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 13N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,314.47	14.71	92.00	4,156.00	-37.26	1,066.95	-1,061.75	2.00	-2.00	0.00	
<b>Sussex</b>										
4,400.00	13.00	92.00	4,239.04	-37.97	1,087.42	-1,082.12	2.00	-2.00	0.00	
4,500.00	11.00	92.00	4,336.85	-38.70	1,108.20	-1,102.80	2.00	-2.00	0.00	
4,600.00	9.00	92.00	4,435.33	-39.31	1,125.55	-1,120.07	2.00	-2.00	0.00	
4,700.00	7.00	92.00	4,534.35	-39.79	1,139.46	-1,133.91	2.00	-2.00	0.00	
4,800.00	5.00	92.00	4,633.80	-40.16	1,149.91	-1,144.30	2.00	-2.00	0.00	
4,900.00	3.00	92.00	4,733.55	-40.40	1,156.88	-1,151.24	2.00	-2.00	0.00	
5,000.00	1.00	92.00	4,833.48	-40.52	1,160.37	-1,154.71	2.00	-2.00	0.00	
5,050.00	0.00	0.00	4,883.48	-40.54	1,160.80	-1,155.15	2.00	-2.00	0.00	
<b>End Drop @ 5050.00ft</b>										
5,100.00	0.00	0.00	4,933.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,033.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,133.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,233.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,333.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,433.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,533.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,633.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,733.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,833.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,933.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,033.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,133.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,233.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,333.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,433.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,533.48	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
6,731.91	0.00	0.00	6,565.39	-40.54	1,160.80	-1,155.15	0.00	0.00	0.00	
<b>KOP @ 6731.91ft</b>										
6,800.00	6.13	268.03	6,633.35	-40.66	1,157.17	-1,151.51	9.00	9.00	0.00	
6,900.00	15.13	268.03	6,731.53	-41.30	1,138.75	-1,133.10	9.00	9.00	0.00	
7,000.00	24.13	268.03	6,825.63	-42.45	1,105.22	-1,099.56	9.00	9.00	0.00	
7,100.00	33.13	268.03	6,913.31	-44.10	1,057.38	-1,051.73	9.00	9.00	0.00	
7,200.00	42.13	268.03	6,992.43	-46.20	996.43	-990.78	9.00	9.00	0.00	
7,216.89	43.65	268.03	7,004.80	-46.60	984.94	-979.29	9.00	9.00	0.00	
<b>Sharon Springs</b>										
7,300.00	51.13	268.03	7,061.03	-48.70	923.85	-918.21	9.00	9.00	0.00	
<b>DLS = 9°/100'</b>										
7,330.85	53.90	268.03	7,079.80	-49.54	899.39	-893.74	9.00	9.00	0.00	
<b>Niobrara Top</b>										
7,400.00	60.13	268.03	7,117.43	-51.54	841.45	-835.80	9.00	9.00	0.00	
7,441.48	63.86	268.03	7,136.90	-52.80	804.86	-799.21	9.00	9.00	0.00	
<b>Niobrara B Bench</b>										
7,500.00	69.13	268.03	7,160.23	-54.65	751.24	-745.60	9.00	9.00	0.00	
7,592.94	77.49	268.03	7,186.90	-57.71	662.35	-656.71	9.00	9.00	0.00	
<b>Niobrara C Bench</b>										
7,600.00	78.13	268.03	7,188.39	-57.95	655.45	-649.81	9.00	9.00	0.00	
7,700.00	87.13	268.03	7,201.21	-61.36	556.44	-550.80	9.00	9.00	0.00	
7,735.33	90.31	268.03	7,202.00	-62.58	521.14	-515.51	9.00	9.00	0.00	
<b>End Build @ 7735.33ft - Top of Production</b>										
7,800.00	90.31	268.03	7,201.65	-64.80	456.51	-450.88	0.00	0.00	0.00	
7,900.00	90.31	268.03	7,201.12	-68.25	356.57	-350.94	0.00	0.00	0.00	

# Anadarko

## Planning Report

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 16-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 13N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,000.00	90.31	268.03	7,200.58	-71.69	256.63	-251.01	0.00	0.00	0.00
8,100.00	90.31	268.03	7,200.04	-75.13	156.69	-151.07	0.00	0.00	0.00
8,200.00	90.31	268.03	7,199.50	-78.58	56.75	-51.13	0.00	0.00	0.00
8,300.00	90.31	268.03	7,198.97	-82.02	-43.19	48.80	0.00	0.00	0.00
8,400.00	90.31	268.03	7,198.43	-85.46	-143.12	148.74	0.00	0.00	0.00
8,500.00	90.31	268.03	7,197.89	-88.91	-243.06	248.67	0.00	0.00	0.00
8,600.00	90.31	268.03	7,197.36	-92.35	-343.00	348.61	0.00	0.00	0.00
8,700.00	90.31	268.03	7,196.82	-95.79	-442.94	448.55	0.00	0.00	0.00
8,800.00	90.31	268.03	7,196.28	-99.24	-542.88	548.48	0.00	0.00	0.00
8,900.00	90.31	268.03	7,195.75	-102.68	-642.82	648.42	0.00	0.00	0.00
9,000.00	90.31	268.03	7,195.21	-106.13	-742.76	748.35	0.00	0.00	0.00
9,100.00	90.31	268.03	7,194.67	-109.57	-842.70	848.29	0.00	0.00	0.00
9,200.00	90.31	268.03	7,194.14	-113.01	-942.64	948.23	0.00	0.00	0.00
9,300.00	90.31	268.03	7,193.60	-116.46	-1,042.58	1,048.16	0.00	0.00	0.00
9,400.00	90.31	268.03	7,193.06	-119.90	-1,142.52	1,148.10	0.00	0.00	0.00
9,500.00	90.31	268.03	7,192.52	-123.34	-1,242.46	1,248.03	0.00	0.00	0.00
9,600.00	90.31	268.03	7,191.99	-126.79	-1,342.40	1,347.97	0.00	0.00	0.00
9,700.00	90.31	268.03	7,191.45	-130.23	-1,442.34	1,447.91	0.00	0.00	0.00
Turn to BHL @ 9700.00ft									
9,800.00	90.31	266.03	7,190.91	-135.42	-1,542.19	1,547.88	2.00	0.00	-2.00
9,881.08	90.31	264.41	7,190.48	-142.18	-1,622.99	1,628.95	2.00	0.00	-2.00
End Turn @ 9881.08ft									
9,900.00	90.31	264.41	7,190.38	-144.02	-1,641.82	1,647.86	0.00	0.00	0.00
10,000.00	90.31	264.41	7,189.84	-153.77	-1,741.34	1,747.82	0.00	0.00	0.00
10,100.00	90.31	264.41	7,189.31	-163.52	-1,840.86	1,847.78	0.00	0.00	0.00
10,200.00	90.31	264.41	7,188.77	-173.27	-1,940.38	1,947.74	0.00	0.00	0.00
10,300.00	90.31	264.41	7,188.24	-183.02	-2,039.91	2,047.70	0.00	0.00	0.00
10,400.00	90.31	264.41	7,187.70	-192.77	-2,139.43	2,147.66	0.00	0.00	0.00
10,500.00	90.31	264.41	7,187.17	-202.52	-2,238.95	2,247.62	0.00	0.00	0.00
10,600.00	90.31	264.41	7,186.63	-212.27	-2,338.47	2,347.58	0.00	0.00	0.00
10,700.00	90.31	264.41	7,186.10	-222.02	-2,437.99	2,447.54	0.00	0.00	0.00
10,800.00	90.31	264.41	7,185.56	-231.77	-2,537.52	2,547.50	0.00	0.00	0.00
10,900.00	90.31	264.41	7,185.03	-241.52	-2,637.04	2,647.46	0.00	0.00	0.00
11,000.00	90.31	264.41	7,184.49	-251.26	-2,736.56	2,747.42	0.00	0.00	0.00
11,100.00	90.31	264.41	7,183.96	-261.01	-2,836.08	2,847.38	0.00	0.00	0.00
11,200.00	90.31	264.41	7,183.43	-270.76	-2,935.61	2,947.34	0.00	0.00	0.00
11,300.00	90.31	264.41	7,182.89	-280.51	-3,035.13	3,047.30	0.00	0.00	0.00
11,400.00	90.31	264.41	7,182.36	-290.26	-3,134.65	3,147.26	0.00	0.00	0.00
11,500.00	90.31	264.41	7,181.82	-300.01	-3,234.17	3,247.22	0.00	0.00	0.00
11,600.00	90.31	264.41	7,181.29	-309.76	-3,333.69	3,347.18	0.00	0.00	0.00
11,700.00	90.31	264.41	7,180.75	-319.51	-3,433.22	3,447.14	0.00	0.00	0.00
11,800.00	90.31	264.41	7,180.22	-329.26	-3,532.74	3,547.10	0.00	0.00	0.00
11,900.00	90.31	264.41	7,179.68	-339.01	-3,632.26	3,647.06	0.00	0.00	0.00
12,000.00	90.31	264.41	7,179.15	-348.76	-3,731.78	3,747.02	0.00	0.00	0.00
12,100.00	90.31	264.41	7,178.61	-358.51	-3,831.31	3,846.98	0.00	0.00	0.00
12,200.00	90.31	264.41	7,178.08	-368.26	-3,930.83	3,946.94	0.00	0.00	0.00
12,300.00	90.31	264.41	7,177.54	-378.00	-4,030.35	4,046.90	0.00	0.00	0.00
12,400.00	90.31	264.41	7,177.01	-387.75	-4,129.87	4,146.86	0.00	0.00	0.00
12,401.29	90.31	264.41	7,177.00	-387.88	-4,131.16	4,148.15	0.00	0.00	0.00
TD Well @ 12401.29ft									

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 13N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 16-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 13N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
3N-R68W-Sec. 27_Secti	0.00	0.00	0.00	0.73	-149.93	14,601,968.89	1,645,309.73	40.206606	-104.982475
- plan misses target center by 149.93usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-901.61	-4,440.91	14,601,066.38	1,640,869.01		
Point 2			0.00	-893.57	-1,805.40	14,601,074.96	1,643,504.51		
Point 3			0.00	-845.64	823.41	14,601,123.42	1,646,133.31		
Point 4			0.00	-3,498.41	802.83	14,598,470.65	1,646,113.27		
Point 5			0.00	-6,154.53	782.53	14,595,814.52	1,646,093.52		
Point 6			0.00	-6,204.04	-4,436.84	14,595,763.95	1,640,874.16		
HILGERS 13N-22HZ_Sf	0.00	0.00	0.00	0.00	0.00	14,601,968.20	1,645,459.67	40.206604	-104.981938
- plan hits target center									
- Point									
HILGERS 13N-22HZ_Hz	0.00	0.00	0.00	0.00	0.00	14,601,968.20	1,645,459.67	40.206604	-104.981938
- plan hits target center									
- Polygon									
Point 1			0.00	-33.82	-4,129.50	14,601,933.53	1,641,330.17		
Point 2			0.00	-22.91	-3,273.49	14,601,944.62	1,642,186.18		
Point 3			0.00	-6.14	-1,957.52	14,601,961.66	1,643,502.15		
Point 4			0.00	10.61	-642.71	14,601,978.67	1,644,816.95		
Point 5			0.00	27.36	672.11	14,601,995.69	1,646,131.77		
Point 6			0.00	34.25	1,528.62	14,602,002.76	1,646,988.28		
Point 7			0.00	-375.84	1,532.30	14,601,592.67	1,646,992.04		
Point 8			0.00	-384.23	674.10	14,601,584.10	1,646,133.84		
Point 9			0.00	-409.64	-640.46	14,601,558.42	1,644,819.29		
Point 10			0.00	-435.09	-1,955.02	14,601,532.71	1,643,504.73		
Point 11			0.00	-439.15	-3,271.91	14,601,528.38	1,642,187.85		
Point 12			0.00	-441.78	-4,128.78	14,601,525.57	1,641,330.98		
Point 13			0.00	-33.82	-4,129.50	14,601,933.53	1,641,330.17		
3N-R68W-Sec. 34_Secti	0.00	0.00	0.00	0.73	-149.93	14,601,968.89	1,645,309.73	40.206606	-104.982475
- plan misses target center by 149.93usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-6,204.04	-4,436.84	14,595,763.95	1,640,874.16		
Point 2			0.00	-6,154.53	782.53	14,595,814.52	1,646,093.52		
Point 3			0.00	-11,510.48	839.68	14,590,458.58	1,646,151.76		
Point 4			0.00	-11,511.55	-4,434.16	14,590,456.44	1,640,877.92		
3N-R68W-Sec. 26_Secti	0.00	0.00	0.00	0.73	-149.93	14,601,968.89	1,645,309.73	40.206606	-104.982475
- plan misses target center by 149.93usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-842.64	823.41	14,601,126.42	1,646,133.31		
Point 2			0.00	-816.40	6,107.25	14,601,153.74	1,651,417.15		
Point 3			0.00	-6,122.12	6,096.28	14,595,848.01	1,651,407.26		
Point 4			0.00	-6,154.53	782.53	14,595,814.52	1,646,093.52		
3N-R68W-Sec. 22_Secti	0.00	0.00	15.00	2,788.33	155.22	14,604,756.55	1,645,614.32	40.214261	-104.981382
- plan misses target center by 2792.64usft at 15.00usft MD (15.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			15.00	1,609.13	-4,756.64	14,606,364.71	1,640,857.35		
Point 2			15.00	1,644.10	-2,132.46	14,606,400.22	1,643,481.52		
Point 3			15.00	1,698.21	493.16	14,606,454.86	1,646,107.13		
Point 4			15.00	-967.02	505.37	14,603,789.63	1,646,119.89		
Point 5			15.00	-3,630.21	518.25	14,601,126.45	1,646,133.31		
Point 6			15.00	-3,681.09	-2,110.42	14,601,075.03	1,643,504.65		
Point 7			15.00	-3,689.13	-4,746.07	14,601,066.46	1,640,869.00		
Point 8			15.00	-1,042.08	-4,750.66	14,603,713.51	1,640,863.87		
HILGERS 13N-22HZ_TC	0.00	0.00	7,177.00	-387.88	-4,131.16	14,601,579.47	1,641,328.58	40.205538	-104.996734
- plan hits target center									

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 13N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5016.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 16-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 13N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

- Point									
HILGERS 13N-22HZ_La	0.00	0.00	7,191.45	-130.23	-1,442.34	14,601,837.67	1,644,017.35	40.206246	-104.987104
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,838.66	1,800.00	9 5/8"	9-5/8	13-1/2	
7,735.33	7,202.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
316.00	210.00	Fox Hills				
4,314.47	4,050.00	Sussex				
7,216.89	6,898.80	Sharon Springs				
7,330.85	6,973.80	Niobrara Top				
7,441.48	7,030.90	Niobrara B Bench				
7,592.94	7,080.90	Niobrara C Bench				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft
1,450.00	1,430.36	-6.52	186.84	End Nudge @ 1450.00ft
4,150.00	3,998.21	-35.64	1,020.67	Begin Drop @ 4150.00ft
5,050.00	4,883.48	-40.54	1,160.80	End Drop @ 5050.00ft
6,731.91	6,565.39	-40.54	1,160.80	KOP @ 6731.91ft
7,300.00	7,061.03	-48.70	923.85	DLS = 9°/100'
7,735.33	7,202.00	-62.58	521.14	End Build @ 7735.33ft
9,700.00	7,191.45	-130.23	-1,442.34	Turn to BHL @ 9700.00ft
9,881.08	7,190.48	-142.18	-1,622.99	End Turn @ 9881.08ft
12,401.29	7,177.00	-387.88	-4,131.16	TD Well @ 12401.29ft