

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
3N-68W-22 Hilgers 9-22HZ Pad  
HILGERS 12N-22HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**06 September, 2015**

Project: WELD-NAD83-UTMFT13N

Site: 3N-68W-22 Hilgers 9-22HZ Pad

Well: HILGERS 12N-22HZ

Wellbore: Plan A

Design: Permit Rev-1

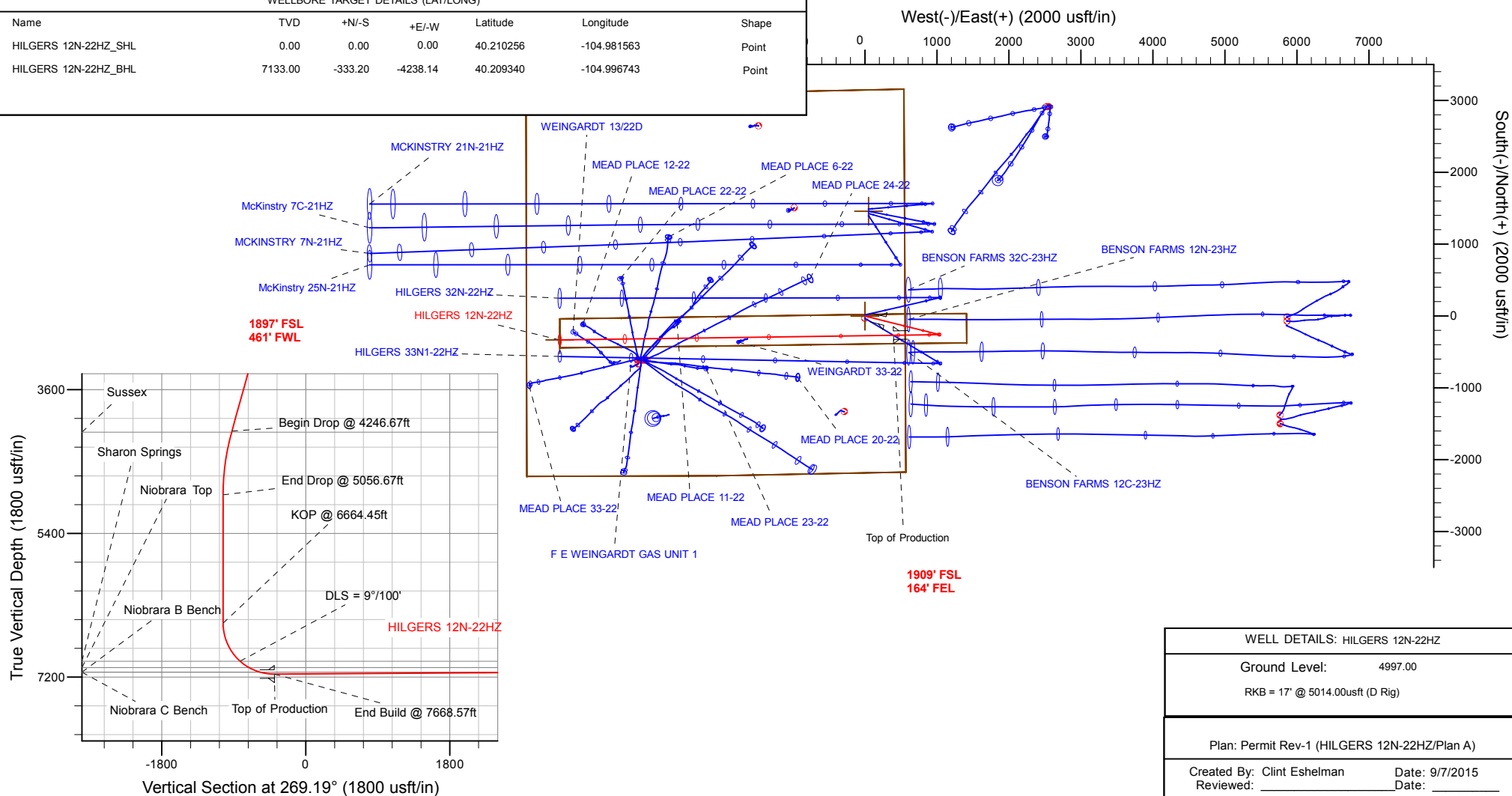
# US ROCKIES WATTENBERG PLANNING

## SECTION DETAILS

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	1316.67	16.00	104.00	1302.86	-35.80	143.57	1.50	104.00	-143.05	
4	4256.67	16.00	104.00	4128.97	-231.84	929.88	0.00	0.00	-926.51	
5	5056.67	0.00	0.00	4918.61	-258.69	1037.56	2.00	180.00	-1033.80	
6	6664.45	0.00	0.00	6526.39	-258.69	1037.56	0.00	0.00	-1033.80	
7	7668.57	90.37	269.19	7163.00	-267.74	396.88	9.00	269.19	-393.06	
8	12304.15	90.37	269.19	7133.00	-333.20	-4238.14	0.00	0.00	4242.43	HILGERS 12N-22HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HILGERS 12N-22HZ_SHL	0.00	0.00	0.00	40.210256	-104.981563	Point
HILGERS 12N-22HZ_BHL	7133.00	-333.20	-4238.14	40.209340	-104.996743	Point



# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 12N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 9-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 12N-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)		

<b>Site</b>	3N-68W-22 Hilgers 9-22HZ Pad			
<b>Site Position:</b>		<b>Northing:</b>	14,603,313.04 usft	<b>Latitude:</b> 40.210297
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,645,564.09 usft	<b>Longitude:</b> -104.981563
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.01 °

Well	HILGERS 12N-22HZ					
Well Position	+N/-S	-14.93 usft	Northing:	14,603,298.11 usft	Latitude:	40.210256
	+E/-W	0.00 usft	Easting:	1,645,564.09 usft	Longitude:	-104.981563
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,997.00 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	9/4/2015	8.40	66.72	52,563

<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	269.19

<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	
1,316.67	16.00	104.00	1,302.86	-35.80	143.57	1.50	1.50	0.00	104.00	
4,256.67	16.00	104.00	4,128.97	-231.84	929.88	0.00	0.00	0.00	0.00	
5,056.67	0.00	0.00	4,918.61	-258.69	1,037.56	2.00	-2.00	0.00	180.00	
6,664.45	0.00	0.00	6,526.39	-258.69	1,037.56	0.00	0.00	0.00	0.00	
7,668.57	90.37	269.19	7,163.00	-267.74	396.88	9.00	9.00	-9.04	269.19	
12,304.15	90.37	269.19	7,133.00	-333.20	-4,238.14	0.00	0.00	0.00	0.00	HILGERS 12N-22HZ_

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 12N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 9-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 12N-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	104.00	300.00	-0.08	0.32	-0.32	1.50	1.50	0.00
314.00	0.96	104.00	314.00	-0.13	0.52	-0.52	1.50	1.50	0.00
Fox Hills									
400.00	2.25	104.00	399.96	-0.71	2.86	-2.85	1.50	1.50	0.00
500.00	3.75	104.00	499.82	-1.98	7.94	-7.91	1.50	1.50	0.00
600.00	5.25	104.00	599.51	-3.88	15.55	-15.49	1.50	1.50	0.00
700.00	6.75	104.00	698.96	-6.41	25.69	-25.60	1.50	1.50	0.00
800.00	8.25	104.00	798.10	-9.56	38.35	-38.22	1.50	1.50	0.00
900.00	9.75	104.00	896.87	-13.35	53.53	-53.34	1.50	1.50	0.00
1,000.00	11.25	104.00	995.19	-17.76	71.21	-70.96	1.50	1.50	0.00
1,100.00	12.75	104.00	1,093.00	-22.79	91.39	-91.06	1.50	1.50	0.00
1,200.00	14.25	104.00	1,190.24	-28.43	114.04	-113.62	1.50	1.50	0.00
1,300.00	15.75	104.00	1,286.83	-34.69	139.15	-138.65	1.50	1.50	0.00
1,316.67	16.00	104.00	1,302.86	-35.80	143.57	-143.05	1.50	1.50	0.00
End Nudge @ 1316.67ft									
1,400.00	16.00	104.00	1,382.96	-41.35	165.86	-165.26	0.00	0.00	0.00
1,500.00	16.00	104.00	1,479.09	-48.02	192.61	-191.91	0.00	0.00	0.00
1,600.00	16.00	104.00	1,575.21	-54.69	219.35	-218.56	0.00	0.00	0.00
1,700.00	16.00	104.00	1,671.34	-61.36	246.10	-245.20	0.00	0.00	0.00
1,800.00	16.00	104.00	1,767.47	-68.03	272.84	-271.85	0.00	0.00	0.00
1,833.84	16.00	104.00	1,800.00	-70.28	281.89	-280.87	0.00	0.00	0.00
9 5/8"									
1,900.00	16.00	104.00	1,863.59	-74.70	299.59	-298.50	0.00	0.00	0.00
2,000.00	16.00	104.00	1,959.72	-81.36	326.33	-325.15	0.00	0.00	0.00
2,100.00	16.00	104.00	2,055.85	-88.03	353.08	-351.80	0.00	0.00	0.00
2,200.00	16.00	104.00	2,151.97	-94.70	379.82	-378.44	0.00	0.00	0.00
2,300.00	16.00	104.00	2,248.10	-101.37	406.57	-405.09	0.00	0.00	0.00
2,400.00	16.00	104.00	2,344.22	-108.04	433.31	-431.74	0.00	0.00	0.00
2,500.00	16.00	104.00	2,440.35	-114.70	460.06	-458.39	0.00	0.00	0.00
2,600.00	16.00	104.00	2,536.48	-121.37	486.80	-485.04	0.00	0.00	0.00
2,700.00	16.00	104.00	2,632.60	-128.04	513.55	-511.68	0.00	0.00	0.00
2,800.00	16.00	104.00	2,728.73	-134.71	540.29	-538.33	0.00	0.00	0.00
2,900.00	16.00	104.00	2,824.85	-141.38	567.04	-564.98	0.00	0.00	0.00
3,000.00	16.00	104.00	2,920.98	-148.05	593.78	-591.63	0.00	0.00	0.00
3,100.00	16.00	104.00	3,017.11	-154.71	620.53	-618.28	0.00	0.00	0.00
3,200.00	16.00	104.00	3,113.23	-161.38	647.27	-644.93	0.00	0.00	0.00
3,300.00	16.00	104.00	3,209.36	-168.05	674.02	-671.57	0.00	0.00	0.00
3,400.00	16.00	104.00	3,305.49	-174.72	700.76	-698.22	0.00	0.00	0.00
3,500.00	16.00	104.00	3,401.61	-181.39	727.51	-724.87	0.00	0.00	0.00
3,600.00	16.00	104.00	3,497.74	-188.06	754.25	-751.52	0.00	0.00	0.00
3,700.00	16.00	104.00	3,593.86	-194.72	781.00	-778.17	0.00	0.00	0.00
3,800.00	16.00	104.00	3,689.99	-201.39	807.74	-804.81	0.00	0.00	0.00
3,900.00	16.00	104.00	3,786.12	-208.06	834.49	-831.46	0.00	0.00	0.00
4,000.00	16.00	104.00	3,882.24	-214.73	861.23	-858.11	0.00	0.00	0.00
4,100.00	16.00	104.00	3,978.37	-221.40	887.98	-884.76	0.00	0.00	0.00
4,200.00	16.00	104.00	4,074.50	-228.07	914.72	-911.41	0.00	0.00	0.00
4,246.67	16.00	104.00	4,119.36	-231.18	927.20	-923.84	0.00	0.00	0.00
Begin Drop @ 4246.67ft									
4,256.67	16.00	104.00	4,128.97	-231.84	929.88	-926.51	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' @ 5014.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 9-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 12N-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)
4,261.90	15.90	104.00	4,134.00	-232.19	931.27	-927.90	2.00	-2.00	0.00
<b>Sussex</b>									
4,300.00	15.13	104.00	4,170.71	-234.66	941.16	-937.75	2.00	-2.00	0.00
4,400.00	13.13	104.00	4,267.68	-240.56	964.85	-961.35	2.00	-2.00	0.00
4,500.00	11.13	104.00	4,365.44	-245.65	985.24	-981.67	2.00	-2.00	0.00
4,600.00	9.13	104.00	4,463.87	-249.91	1,002.31	-998.68	2.00	-2.00	0.00
4,700.00	7.13	104.00	4,562.86	-253.33	1,016.04	-1,012.36	2.00	-2.00	0.00
4,800.00	5.13	104.00	4,662.29	-255.91	1,026.41	-1,022.69	2.00	-2.00	0.00
4,900.00	3.13	104.00	4,762.02	-257.66	1,033.40	-1,029.66	2.00	-2.00	0.00
5,000.00	1.13	104.00	4,861.95	-258.56	1,037.01	-1,033.25	2.00	-2.00	0.00
5,056.67	0.00	0.00	4,918.61	-258.69	1,037.56	-1,033.80	2.00	-2.00	0.00
<b>End Drop @ 5056.67ft</b>									
5,100.00	0.00	0.00	4,961.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
5,200.00	0.00	0.00	5,061.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
5,300.00	0.00	0.00	5,161.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
5,400.00	0.00	0.00	5,261.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
5,500.00	0.00	0.00	5,361.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
5,600.00	0.00	0.00	5,461.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
5,700.00	0.00	0.00	5,561.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
5,800.00	0.00	0.00	5,661.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
5,900.00	0.00	0.00	5,761.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
6,000.00	0.00	0.00	5,861.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
6,100.00	0.00	0.00	5,961.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
6,200.00	0.00	0.00	6,061.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
6,300.00	0.00	0.00	6,161.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
6,400.00	0.00	0.00	6,261.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
6,500.00	0.00	0.00	6,361.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
6,600.00	0.00	0.00	6,461.94	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
6,664.45	0.00	0.00	6,526.39	-258.69	1,037.56	-1,033.80	0.00	0.00	0.00
<b>KOP @ 6664.45ft</b>									
6,700.00	3.20	269.19	6,561.92	-258.71	1,036.56	-1,032.80	9.00	9.00	0.00
6,800.00	12.20	269.19	6,660.92	-258.90	1,023.18	-1,019.42	9.00	9.00	0.00
6,900.00	21.20	269.19	6,756.60	-259.30	994.48	-990.71	9.00	9.00	0.00
7,000.00	30.20	269.19	6,846.62	-259.91	951.16	-947.39	9.00	9.00	0.00
7,100.00	39.20	269.19	6,928.75	-260.72	894.30	-890.52	9.00	9.00	0.00
7,200.00	48.20	269.19	7,000.97	-261.69	825.29	-821.51	9.00	9.00	0.00
<b>DLS = 9°/100'</b>									
7,201.54	48.34	269.19	7,002.00	-261.71	824.14	-820.35	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,300.00	57.20	269.19	7,061.51	-262.81	745.83	-742.04	9.00	9.00	0.00
7,339.78	60.78	269.19	7,082.00	-263.29	711.75	-707.95	9.00	9.00	0.00
<b>Niobrara Top</b>									
7,400.00	66.20	269.19	7,108.87	-264.05	657.88	-654.08	9.00	9.00	0.00
7,487.95	74.12	269.19	7,138.70	-265.22	575.23	-571.42	9.00	9.00	0.00
<b>Niobrara B Bench - Niobrara C Bench</b>									
7,500.00	75.20	269.19	7,141.89	-265.39	563.61	-559.80	9.00	9.00	0.00
7,600.00	84.20	269.19	7,159.75	-266.77	465.33	-461.51	9.00	9.00	0.00
7,668.57	90.37	269.19	7,163.00	-267.74	396.88	-393.05	9.00	9.00	0.00
<b>End Build @ 7668.57ft - Top of Production</b>									
7,700.00	90.37	269.19	7,162.79	-268.18	365.45	-361.62	0.00	0.00	0.00
7,800.00	90.37	269.19	7,162.15	-269.60	265.46	-261.63	0.00	0.00	0.00
7,900.00	90.37	269.19	7,161.50	-271.01	165.48	-161.63	0.00	0.00	0.00
8,000.00	90.37	269.19	7,160.85	-272.42	65.49	-61.63	0.00	0.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 12N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 9-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 12N-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)
8,100.00	90.37	269.19	7,160.20	-273.83	-34.50	38.37	0.00	0.00	0.00
8,200.00	90.37	269.19	7,159.56	-275.24	-134.49	138.37	0.00	0.00	0.00
8,300.00	90.37	269.19	7,158.91	-276.66	-234.48	238.36	0.00	0.00	0.00
8,400.00	90.37	269.19	7,158.26	-278.07	-334.46	338.36	0.00	0.00	0.00
8,500.00	90.37	269.19	7,157.62	-279.48	-434.45	438.36	0.00	0.00	0.00
8,600.00	90.37	269.19	7,156.97	-280.89	-534.44	538.36	0.00	0.00	0.00
8,700.00	90.37	269.19	7,156.32	-282.31	-634.43	638.36	0.00	0.00	0.00
8,800.00	90.37	269.19	7,155.67	-283.72	-734.42	738.35	0.00	0.00	0.00
8,900.00	90.37	269.19	7,155.03	-285.13	-834.40	838.35	0.00	0.00	0.00
9,000.00	90.37	269.19	7,154.38	-286.54	-934.39	938.35	0.00	0.00	0.00
9,100.00	90.37	269.19	7,153.73	-287.95	-1,034.38	1,038.35	0.00	0.00	0.00
9,200.00	90.37	269.19	7,153.09	-289.37	-1,134.37	1,138.34	0.00	0.00	0.00
9,300.00	90.37	269.19	7,152.44	-290.78	-1,234.36	1,238.34	0.00	0.00	0.00
9,400.00	90.37	269.19	7,151.79	-292.19	-1,334.34	1,338.34	0.00	0.00	0.00
9,500.00	90.37	269.19	7,151.15	-293.60	-1,434.33	1,438.34	0.00	0.00	0.00
9,600.00	90.37	269.19	7,150.50	-295.01	-1,534.32	1,538.34	0.00	0.00	0.00
9,700.00	90.37	269.19	7,149.85	-296.43	-1,634.31	1,638.33	0.00	0.00	0.00
9,800.00	90.37	269.19	7,149.20	-297.84	-1,734.30	1,738.33	0.00	0.00	0.00
9,900.00	90.37	269.19	7,148.56	-299.25	-1,834.28	1,838.33	0.00	0.00	0.00
10,000.00	90.37	269.19	7,147.91	-300.66	-1,934.27	1,938.33	0.00	0.00	0.00
10,100.00	90.37	269.19	7,147.26	-302.07	-2,034.26	2,038.33	0.00	0.00	0.00
10,200.00	90.37	269.19	7,146.62	-303.49	-2,134.25	2,138.32	0.00	0.00	0.00
10,300.00	90.37	269.19	7,145.97	-304.90	-2,234.23	2,238.32	0.00	0.00	0.00
10,400.00	90.37	269.19	7,145.32	-306.31	-2,334.22	2,338.32	0.00	0.00	0.00
10,500.00	90.37	269.19	7,144.67	-307.72	-2,434.21	2,438.32	0.00	0.00	0.00
10,600.00	90.37	269.19	7,144.03	-309.14	-2,534.20	2,538.32	0.00	0.00	0.00
10,700.00	90.37	269.19	7,143.38	-310.55	-2,634.19	2,638.31	0.00	0.00	0.00
10,800.00	90.37	269.19	7,142.73	-311.96	-2,734.17	2,738.31	0.00	0.00	0.00
10,900.00	90.37	269.19	7,142.09	-313.37	-2,834.16	2,838.31	0.00	0.00	0.00
11,000.00	90.37	269.19	7,141.44	-314.78	-2,934.15	2,938.31	0.00	0.00	0.00
11,100.00	90.37	269.19	7,140.79	-316.20	-3,034.14	3,038.31	0.00	0.00	0.00
11,200.00	90.37	269.19	7,140.14	-317.61	-3,134.13	3,138.30	0.00	0.00	0.00
11,300.00	90.37	269.19	7,139.50	-319.02	-3,234.11	3,238.30	0.00	0.00	0.00
11,400.00	90.37	269.19	7,138.85	-320.43	-3,334.10	3,338.30	0.00	0.00	0.00
11,500.00	90.37	269.19	7,138.20	-321.84	-3,434.09	3,438.30	0.00	0.00	0.00
11,600.00	90.37	269.19	7,137.56	-323.26	-3,534.08	3,538.29	0.00	0.00	0.00
11,700.00	90.37	269.19	7,136.91	-324.67	-3,634.07	3,638.29	0.00	0.00	0.00
11,800.00	90.37	269.19	7,136.26	-326.08	-3,734.05	3,738.29	0.00	0.00	0.00
11,900.00	90.37	269.19	7,135.62	-327.49	-3,834.04	3,838.29	0.00	0.00	0.00
12,000.00	90.37	269.19	7,134.97	-328.91	-3,934.03	3,938.29	0.00	0.00	0.00
12,100.00	90.37	269.19	7,134.32	-330.32	-4,034.02	4,038.28	0.00	0.00	0.00
12,200.00	90.37	269.19	7,133.67	-331.73	-4,134.01	4,138.28	0.00	0.00	0.00
12,300.00	90.37	269.19	7,133.03	-333.14	-4,233.99	4,238.28	0.00	0.00	0.00
12,304.15	90.37	269.19	7,133.00	-333.20	-4,238.14	4,242.43	0.00	0.00	0.00
TD Well @ 12304.15ft									

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 12N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 9-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 12N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
HILGERS 12N-22HZ_St	0.00	0.00	0.00	0.00	0.00	14,603,298.11	1,645,564.09	40.210256	-104.981563
- plan hits target center									
- Point									
HILGERS 12N-22HZ_Hz	0.00	0.00	0.00	0.00	0.00	14,603,298.11	1,645,564.09	40.210256	-104.981563
- plan hits target center									
- Polygon									
Point 1			0.00	-39.46	-4,236.49	14,603,257.77	1,641,327.61		
Point 2			0.00	-27.26	-3,382.12	14,603,270.14	1,642,181.98		
Point 3			0.00	-8.49	-2,067.76	14,603,289.19	1,643,496.33		
Point 4			0.00	10.29	-753.39	14,603,308.24	1,644,810.70		
Point 5			0.00	29.05	560.97	14,603,327.27	1,646,125.06		
Point 6			0.00	34.42	1,411.96	14,603,332.82	1,646,976.04		
Point 7			0.00	-375.68	1,415.65	14,602,922.72	1,646,979.82		
Point 8			0.00	-382.53	562.97	14,602,915.69	1,646,127.14		
Point 9			0.00	-399.26	-751.73	14,602,898.69	1,644,812.44		
Point 10			0.00	-416.00	-2,066.41	14,602,881.68	1,643,497.77		
Point 11			0.00	-432.75	-3,381.09	14,602,864.65	1,642,183.09		
Point 12			0.00	-443.64	-4,235.79	14,602,853.59	1,641,328.39		
Point 13			0.00	-39.46	-4,236.49	14,603,257.77	1,641,327.61		
3N-R68W-Sec. 22_Secti	0.00	0.00	13.00	1,458.44	50.53	14,604,756.55	1,645,614.32	40.214261	-104.981382
- plan misses target center by 1459.31usft at 13.00usft MD (13.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			13.00	1,609.13	-4,756.64	14,606,364.69	1,640,857.34		
Point 2			13.00	1,644.10	-2,132.46	14,606,400.21	1,643,481.52		
Point 3			13.00	1,698.21	493.16	14,606,454.86	1,646,107.13		
Point 4			13.00	-967.02	505.37	14,603,789.64	1,646,119.89		
Point 5			13.00	-3,630.21	518.25	14,601,126.45	1,646,133.32		
Point 6			13.00	-3,681.09	-2,110.42	14,601,075.02	1,643,504.66		
Point 7			13.00	-3,689.13	-4,746.07	14,601,066.44	1,640,869.02		
Point 8			13.00	-1,042.08	-4,750.66	14,603,713.48	1,640,863.88		
HILGERS 12N-22HZ_Bt	0.00	0.00	7,133.00	-333.20	-4,238.14	14,602,964.02	1,641,326.02	40.209340	-104.996743
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,833.84	1,800.00	9 5/8"	9-5/8	13-1/2	
7,668.57	7,163.00	Top of Production	5-1/2	7-7/8	

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HILGERS 12N-22HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5014.00usft (D Rig)
<b>Site:</b>	3N-68W-22 Hilgers 9-22HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	HILGERS 12N-22HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
314.00	314.00	Fox Hills			
4,261.90	4,134.00	Sussex			
7,201.54	7,002.00	Sharon Springs			
7,339.78	7,082.00	Niobrara Top			
7,487.95	7,138.70	Niobrara B Bench			
7,487.95	7,138.70	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
1,316.67	1,302.86	-35.80	143.57	End Nudge @ 1316.67ft
4,246.67	4,119.36	-231.18	927.20	Begin Drop @ 4246.67ft
5,056.67	4,918.61	-258.69	1,037.56	End Drop @ 5056.67ft
6,664.45	6,526.39	-258.69	1,037.56	KOP @ 6664.45ft
7,200.00	7,000.97	-261.69	825.29	DLS = 9°/100'
7,668.57	7,163.00	-267.74	396.88	End Build @ 7668.57ft
12,304.15	7,133.00	-333.20	-4,238.14	TD Well @ 12304.15ft