

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

HILGERS 9N-34HZ

Plan A

Plan: Permit Rev-1

Standard Planning Report

08 September, 2015

Project: WELD-NAD83-UTMFT13N

Site: 3N-68W-22 Hilgers 16-22HZ Pad

Well: HILGERS 9N-34HZ

Wellbore: Plan A

Design: Permit Rev-1

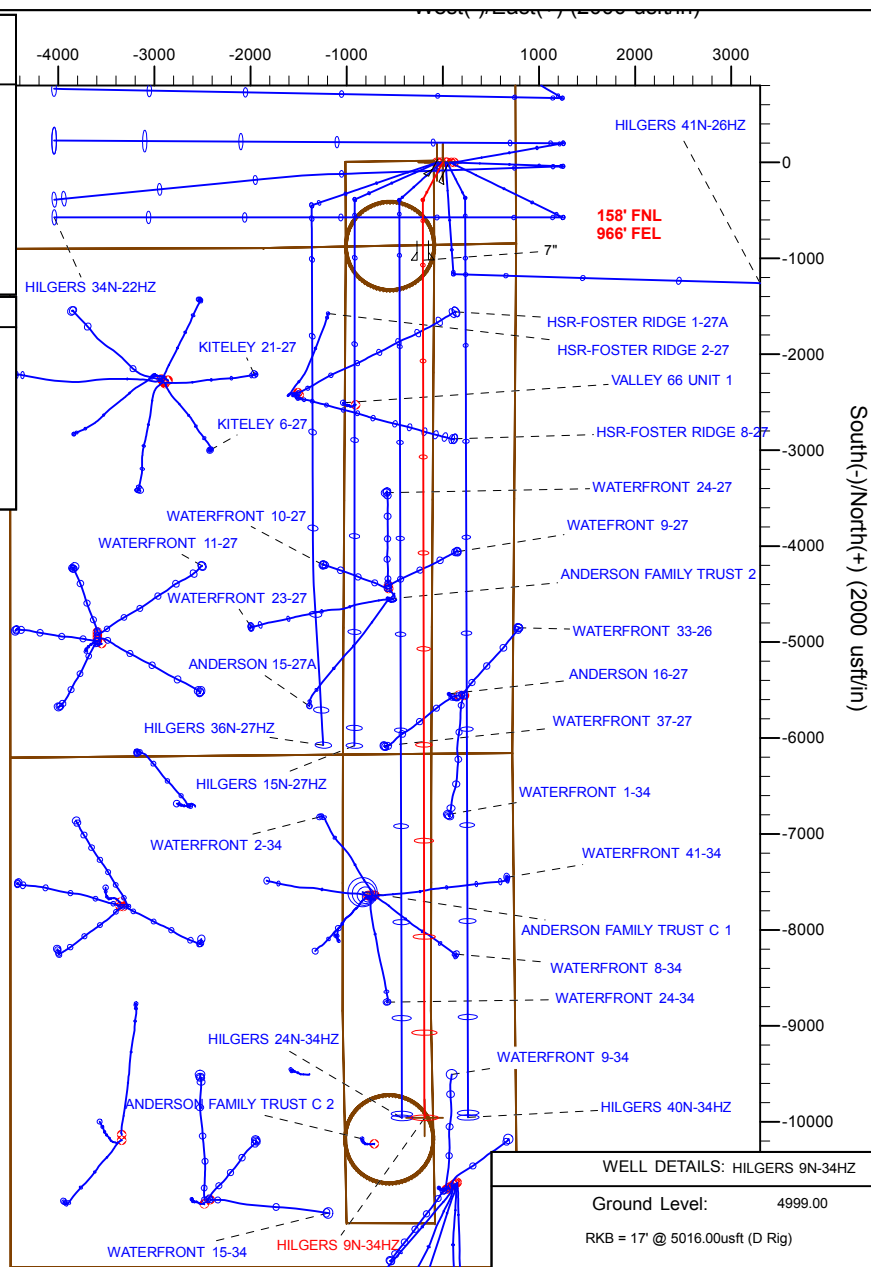
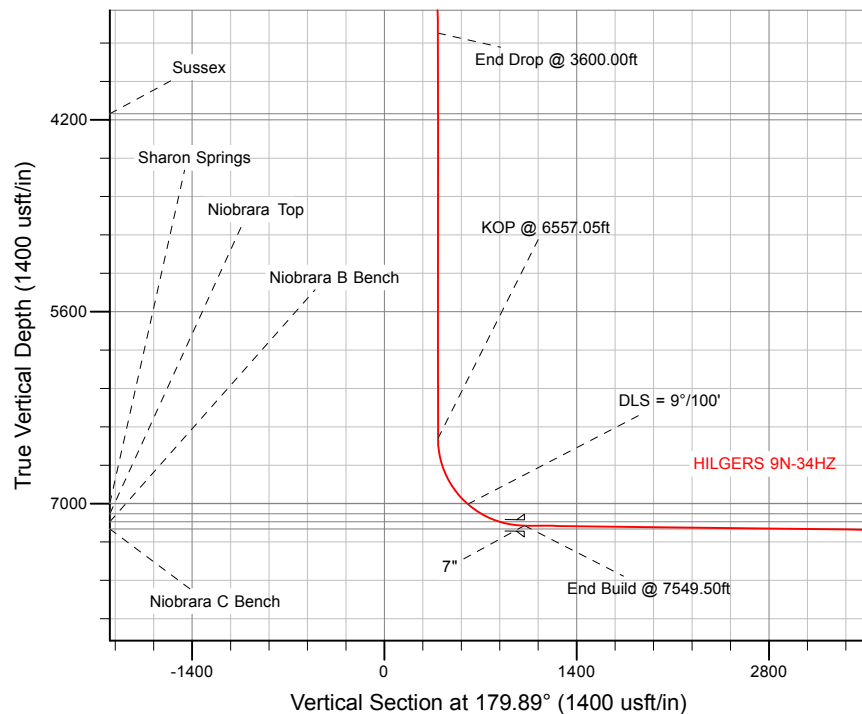
US ROCKIES WATTENBERG PLANNING

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	850.00	9.00	208.00	847.54	-41.52	-22.08	1.50	208.00	41.48	
4	3150.00	9.00	208.00	3119.22	-359.21	-190.99	0.00	0.00	358.84	
5	3600.00	0.00	0.00	3567.37	-390.35	-207.55	2.00	180.00	389.95	
6	6557.05	0.00	0.00	6524.42	-390.35	-207.55	0.00	0.00	389.95	
7	7549.50	89.32	179.89	7161.00	-1019.42	-206.38	9.00	179.89	1019.02	
8	16487.02	89.32	179.89	7267.00	-9956.30	-189.66	0.00	0.00	9955.91	HILGERS 9N-34HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HILGERS 9N-34HZ_SHL	0.00	0.00	0.00	40.206605	-104.982260	Point
HILGERS 9N-34HZ_BHL	7267.00	-9956.30	-189.66	40.179264	-104.982939	Point



WELL DETAILS: HILGERS 9N-34HZ

Ground Level: 4999.00

RKB = 17' @ 5016.00usft (D Rig)

Plan: Permit Rev-1 (HILGERS 9N-34HZ/Plan A)

Created By: Clint Eshelman

Date: 9/8/2015

Reviewed: _____

Date: _____

1562' FSL
953' FEL

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 9N-34HZ					
Well Position	+N/-S	-0.36 usft	Northing:	14,601,968.54 usft	Latitude:	40.206605
	+E/-W	60.03 usft	Easting:	1,645,369.76 usft	Longitude:	-104.982260
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,999.00 usft

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

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.89

Plan Sections										
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	
850.00	9.00	208.00	847.54	-41.52	-22.08	1.50	1.50	0.00	208.00	
3,150.00	9.00	208.00	3,119.22	-359.21	-190.99	0.00	0.00	0.00	0.00	
3,600.00	0.00	0.00	3,567.37	-390.35	-207.55	2.00	-2.00	33.78	180.00	
6,557.05	0.00	0.00	6,524.42	-390.35	-207.55	0.00	0.00	0.00	0.00	
7,549.50	89.32	179.89	7,161.00	-1,019.42	-206.38	9.00	9.00	18.13	179.89	
16,487.02	89.32	179.89	7,267.00	-9,956.30	-189.66	0.00	0.00	0.00	0.00	HILGERS 9N-34HZ_E

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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	208.00	300.00	-0.29	-0.15	0.29	1.50	1.50	0.00
316.00	0.99	208.00	316.00	-0.50	-0.27	0.50	1.50	1.50	0.00
Fox Hills									
400.00	2.25	208.00	399.96	-2.60	-1.38	2.60	1.50	1.50	0.00
500.00	3.75	208.00	499.82	-7.22	-3.84	7.21	1.50	1.50	0.00
600.00	5.25	208.00	599.51	-14.15	-7.52	14.13	1.50	1.50	0.00
700.00	6.75	208.00	698.96	-23.38	-12.43	23.35	1.50	1.50	0.00
800.00	8.25	208.00	798.10	-34.90	-18.56	34.87	1.50	1.50	0.00
850.00	9.00	208.00	847.54	-41.52	-22.08	41.48	1.50	1.50	0.00
End Nudge @ 850.00ft									
900.00	9.00	208.00	896.92	-48.43	-25.75	48.38	0.00	0.00	0.00
1,000.00	9.00	208.00	995.69	-62.24	-33.09	62.18	0.00	0.00	0.00
1,100.00	9.00	208.00	1,094.46	-76.05	-40.44	75.98	0.00	0.00	0.00
1,200.00	9.00	208.00	1,193.23	-89.87	-47.78	89.77	0.00	0.00	0.00
1,300.00	9.00	208.00	1,292.00	-103.68	-55.13	103.57	0.00	0.00	0.00
1,400.00	9.00	208.00	1,390.76	-117.49	-62.47	117.37	0.00	0.00	0.00
1,500.00	9.00	208.00	1,489.53	-131.30	-69.81	131.17	0.00	0.00	0.00
1,600.00	9.00	208.00	1,588.30	-145.12	-77.16	144.97	0.00	0.00	0.00
1,700.00	9.00	208.00	1,687.07	-158.93	-84.50	158.76	0.00	0.00	0.00
1,800.00	9.00	208.00	1,785.84	-172.74	-91.85	172.56	0.00	0.00	0.00
1,814.34	9.00	208.00	1,800.00	-174.72	-92.90	174.54	0.00	0.00	0.00
9 5/8"									
1,900.00	9.00	208.00	1,884.61	-186.55	-99.19	186.36	0.00	0.00	0.00
2,000.00	9.00	208.00	1,983.38	-200.36	-106.54	200.16	0.00	0.00	0.00
2,100.00	9.00	208.00	2,082.15	-214.18	-113.88	213.96	0.00	0.00	0.00
2,200.00	9.00	208.00	2,180.91	-227.99	-121.22	227.76	0.00	0.00	0.00
2,300.00	9.00	208.00	2,279.68	-241.80	-128.57	241.55	0.00	0.00	0.00
2,400.00	9.00	208.00	2,378.45	-255.61	-135.91	255.35	0.00	0.00	0.00
2,500.00	9.00	208.00	2,477.22	-269.43	-143.26	269.15	0.00	0.00	0.00
2,600.00	9.00	208.00	2,575.99	-283.24	-150.60	282.95	0.00	0.00	0.00
2,700.00	9.00	208.00	2,674.76	-297.05	-157.94	296.75	0.00	0.00	0.00
2,800.00	9.00	208.00	2,773.53	-310.86	-165.29	310.55	0.00	0.00	0.00
2,900.00	9.00	208.00	2,872.30	-324.68	-172.63	324.34	0.00	0.00	0.00
3,000.00	9.00	208.00	2,971.07	-338.49	-179.98	338.14	0.00	0.00	0.00
3,100.00	9.00	208.00	3,069.83	-352.30	-187.32	351.94	0.00	0.00	0.00
3,150.00	9.00	208.00	3,119.22	-359.21	-190.99	358.84	0.00	0.00	0.00
Begin Drop @ 3150.00ft									
3,200.00	8.00	208.00	3,168.67	-365.73	-194.46	365.36	2.00	-2.00	0.00
3,300.00	6.00	208.00	3,267.92	-376.49	-200.18	376.11	2.00	-2.00	0.00
3,400.00	4.00	208.00	3,367.53	-384.19	-204.28	383.79	2.00	-2.00	0.00
3,500.00	2.00	208.00	3,467.39	-388.81	-206.73	388.41	2.00	-2.00	0.00
3,600.00	0.00	0.00	3,567.37	-390.35	-207.55	389.95	2.00	-2.00	152.00
End Drop @ 3600.00ft									
3,700.00	0.00	0.00	3,667.37	-390.35	-207.55	389.95	0.00	0.00	0.00
3,800.00	0.00	0.00	3,767.37	-390.35	-207.55	389.95	0.00	0.00	0.00
3,900.00	0.00	0.00	3,867.37	-390.35	-207.55	389.95	0.00	0.00	0.00
4,000.00	0.00	0.00	3,967.37	-390.35	-207.55	389.95	0.00	0.00	0.00
4,100.00	0.00	0.00	4,067.37	-390.35	-207.55	389.95	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
4,188.63	0.00	0.00	4,156.00	-390.35	-207.55	389.95	0.00	0.00	0.00
Sussex									
4,200.00	0.00	0.00	4,167.37	-390.35	-207.55	389.95	0.00	0.00	0.00
4,300.00	0.00	0.00	4,267.37	-390.35	-207.55	389.95	0.00	0.00	0.00
4,400.00	0.00	0.00	4,367.37	-390.35	-207.55	389.95	0.00	0.00	0.00
4,500.00	0.00	0.00	4,467.37	-390.35	-207.55	389.95	0.00	0.00	0.00
4,600.00	0.00	0.00	4,567.37	-390.35	-207.55	389.95	0.00	0.00	0.00
4,700.00	0.00	0.00	4,667.37	-390.35	-207.55	389.95	0.00	0.00	0.00
4,800.00	0.00	0.00	4,767.37	-390.35	-207.55	389.95	0.00	0.00	0.00
4,900.00	0.00	0.00	4,867.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,000.00	0.00	0.00	4,967.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,100.00	0.00	0.00	5,067.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,200.00	0.00	0.00	5,167.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,300.00	0.00	0.00	5,267.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,400.00	0.00	0.00	5,367.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,500.00	0.00	0.00	5,467.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,600.00	0.00	0.00	5,567.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,700.00	0.00	0.00	5,667.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,800.00	0.00	0.00	5,767.37	-390.35	-207.55	389.95	0.00	0.00	0.00
5,900.00	0.00	0.00	5,867.37	-390.35	-207.55	389.95	0.00	0.00	0.00
6,000.00	0.00	0.00	5,967.37	-390.35	-207.55	389.95	0.00	0.00	0.00
6,100.00	0.00	0.00	6,067.37	-390.35	-207.55	389.95	0.00	0.00	0.00
6,200.00	0.00	0.00	6,167.37	-390.35	-207.55	389.95	0.00	0.00	0.00
6,300.00	0.00	0.00	6,267.37	-390.35	-207.55	389.95	0.00	0.00	0.00
6,400.00	0.00	0.00	6,367.37	-390.35	-207.55	389.95	0.00	0.00	0.00
6,500.00	0.00	0.00	6,467.37	-390.35	-207.55	389.95	0.00	0.00	0.00
6,557.05	0.00	0.00	6,524.42	-390.35	-207.55	389.95	0.00	0.00	0.00
KOP @ 6557.05ft									
6,600.00	3.87	179.89	6,567.34	-391.80	-207.55	391.40	9.00	9.00	418.84
6,700.00	12.87	179.89	6,666.17	-406.33	-207.52	405.93	9.00	9.00	0.00
6,800.00	21.87	179.89	6,761.52	-436.15	-207.47	435.75	9.00	9.00	0.00
6,900.00	30.87	179.89	6,851.02	-480.51	-207.38	480.11	9.00	9.00	0.00
7,000.00	39.87	179.89	6,932.49	-538.33	-207.27	537.93	9.00	9.00	0.00
7,092.45	48.19	179.89	6,998.90	-602.52	-207.15	602.12	9.00	9.00	0.00
Sharon Springs									
7,100.00	48.87	179.89	7,003.90	-608.18	-207.14	607.78	9.00	9.00	0.00
DLS = 9°/100'									
7,200.00	57.87	179.89	7,063.51	-688.34	-206.99	687.95	9.00	9.00	0.00
7,220.04	59.67	179.89	7,073.90	-705.48	-206.96	705.08	9.00	9.00	0.00
Niobrara Top									
7,300.00	66.87	179.89	7,109.85	-776.85	-206.83	776.45	9.00	9.00	0.00
7,368.77	73.05	179.89	7,133.40	-841.42	-206.71	841.02	9.00	9.00	0.00
Niobrara B Bench									
7,400.00	75.87	179.89	7,141.77	-871.51	-206.65	871.11	9.00	9.00	0.00
7,500.00	84.87	179.89	7,158.49	-969.99	-206.47	969.60	9.00	9.00	0.00
7,549.50	89.32	179.89	7,161.00	-1,019.42	-206.38	1,019.02	9.00	9.00	0.00
End Build @ 7549.50ft - 7"									
7,600.00	89.32	179.89	7,161.59	-1,069.91	-206.28	1,069.52	0.00	0.00	0.00
7,700.00	89.32	179.89	7,162.78	-1,169.91	-206.09	1,169.51	0.00	0.00	0.00
7,800.00	89.32	179.89	7,163.97	-1,269.90	-205.91	1,269.50	0.00	0.00	0.00
7,900.00	89.32	179.89	7,165.15	-1,369.89	-205.72	1,369.49	0.00	0.00	0.00
8,000.00	89.32	179.89	7,166.34	-1,469.88	-205.53	1,469.49	0.00	0.00	0.00
8,100.00	89.32	179.89	7,167.53	-1,569.88	-205.35	1,569.48	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)	
8,200.00	89.32	179.89	7,168.71	-1,669.87	-205.16	1,669.47	0.00	0.00	0.00	
8,300.00	89.32	179.89	7,169.90	-1,769.86	-204.97	1,769.47	0.00	0.00	0.00	
8,400.00	89.32	179.89	7,171.08	-1,869.86	-204.78	1,869.46	0.00	0.00	0.00	
8,500.00	89.32	179.89	7,172.27	-1,969.85	-204.60	1,969.45	0.00	0.00	0.00	
8,600.00	89.32	179.89	7,173.46	-2,069.84	-204.41	2,069.44	0.00	0.00	0.00	
8,700.00	89.32	179.89	7,174.64	-2,169.83	-204.22	2,169.44	0.00	0.00	0.00	
8,800.00	89.32	179.89	7,175.83	-2,269.83	-204.04	2,269.43	0.00	0.00	0.00	
8,900.00	89.32	179.89	7,177.01	-2,369.82	-203.85	2,369.42	0.00	0.00	0.00	
9,000.00	89.32	179.89	7,178.20	-2,469.81	-203.66	2,469.42	0.00	0.00	0.00	
9,100.00	89.32	179.89	7,179.39	-2,569.81	-203.47	2,569.41	0.00	0.00	0.00	
9,200.00	89.32	179.89	7,180.57	-2,669.80	-203.29	2,669.40	0.00	0.00	0.00	
9,300.00	89.32	179.89	7,181.76	-2,769.79	-203.10	2,769.40	0.00	0.00	0.00	
9,400.00	89.32	179.89	7,182.94	-2,869.78	-202.91	2,869.39	0.00	0.00	0.00	
9,500.00	89.32	179.89	7,184.13	-2,969.78	-202.73	2,969.38	0.00	0.00	0.00	
9,564.95	89.32	179.89	7,184.90	-3,034.72	-202.61	3,034.32	0.00	0.00	0.00	
Niobrara C Bench										
9,600.00	89.32	179.89	7,185.32	-3,069.77	-202.54	3,069.37	0.00	0.00	0.00	
9,700.00	89.32	179.89	7,186.50	-3,169.76	-202.35	3,169.37	0.00	0.00	0.00	
9,800.00	89.32	179.89	7,187.69	-3,269.75	-202.17	3,269.36	0.00	0.00	0.00	
9,900.00	89.32	179.89	7,188.87	-3,369.75	-201.98	3,369.35	0.00	0.00	0.00	
10,000.00	89.32	179.89	7,190.06	-3,469.74	-201.79	3,469.35	0.00	0.00	0.00	
10,100.00	89.32	179.89	7,191.25	-3,569.73	-201.60	3,569.34	0.00	0.00	0.00	
10,200.00	89.32	179.89	7,192.43	-3,669.73	-201.42	3,669.33	0.00	0.00	0.00	
10,300.00	89.32	179.89	7,193.62	-3,769.72	-201.23	3,769.33	0.00	0.00	0.00	
10,400.00	89.32	179.89	7,194.80	-3,869.71	-201.04	3,869.32	0.00	0.00	0.00	
10,500.00	89.32	179.89	7,195.99	-3,969.70	-200.86	3,969.31	0.00	0.00	0.00	
10,600.00	89.32	179.89	7,197.18	-4,069.70	-200.67	4,069.30	0.00	0.00	0.00	
10,700.00	89.32	179.89	7,198.36	-4,169.69	-200.48	4,169.30	0.00	0.00	0.00	
10,800.00	89.32	179.89	7,199.55	-4,269.68	-200.29	4,269.29	0.00	0.00	0.00	
10,900.00	89.32	179.89	7,200.73	-4,369.68	-200.11	4,369.28	0.00	0.00	0.00	
11,000.00	89.32	179.89	7,201.92	-4,469.67	-199.92	4,469.28	0.00	0.00	0.00	
11,100.00	89.32	179.89	7,203.11	-4,569.66	-199.73	4,569.27	0.00	0.00	0.00	
11,200.00	89.32	179.89	7,204.29	-4,669.65	-199.55	4,669.26	0.00	0.00	0.00	
11,300.00	89.32	179.89	7,205.48	-4,769.65	-199.36	4,769.26	0.00	0.00	0.00	
11,400.00	89.32	179.89	7,206.67	-4,869.64	-199.17	4,869.25	0.00	0.00	0.00	
11,500.00	89.32	179.89	7,207.85	-4,969.63	-198.99	4,969.24	0.00	0.00	0.00	
11,600.00	89.32	179.89	7,209.04	-5,069.63	-198.80	5,069.23	0.00	0.00	0.00	
11,700.00	89.32	179.89	7,210.22	-5,169.62	-198.61	5,169.23	0.00	0.00	0.00	
11,800.00	89.32	179.89	7,211.41	-5,269.61	-198.42	5,269.22	0.00	0.00	0.00	
11,900.00	89.32	179.89	7,212.60	-5,369.60	-198.24	5,369.21	0.00	0.00	0.00	
12,000.00	89.32	179.89	7,213.78	-5,469.60	-198.05	5,469.21	0.00	0.00	0.00	
12,100.00	89.32	179.89	7,214.97	-5,569.59	-197.86	5,569.20	0.00	0.00	0.00	
12,200.00	89.32	179.89	7,216.15	-5,669.58	-197.68	5,669.19	0.00	0.00	0.00	
12,300.00	89.32	179.89	7,217.34	-5,769.57	-197.49	5,769.18	0.00	0.00	0.00	
12,400.00	89.32	179.89	7,218.53	-5,869.57	-197.30	5,869.18	0.00	0.00	0.00	
12,500.00	89.32	179.89	7,219.71	-5,969.56	-197.11	5,969.17	0.00	0.00	0.00	
12,600.00	89.32	179.89	7,220.90	-6,069.55	-196.93	6,069.16	0.00	0.00	0.00	
12,700.00	89.32	179.89	7,222.08	-6,169.55	-196.74	6,169.16	0.00	0.00	0.00	
12,800.00	89.32	179.89	7,223.27	-6,269.54	-196.55	6,269.15	0.00	0.00	0.00	
12,900.00	89.32	179.89	7,224.46	-6,369.53	-196.37	6,369.14	0.00	0.00	0.00	
13,000.00	89.32	179.89	7,225.64	-6,469.52	-196.18	6,469.14	0.00	0.00	0.00	
13,100.00	89.32	179.89	7,226.83	-6,569.52	-195.99	6,569.13	0.00	0.00	0.00	
13,200.00	89.32	179.89	7,228.01	-6,669.51	-195.81	6,669.12	0.00	0.00	0.00	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)	
13,300.00	89.32	179.89	7,229.20	-6,769.50	-195.62	6,769.11	0.00	0.00	0.00	
13,400.00	89.32	179.89	7,230.39	-6,869.50	-195.43	6,869.11	0.00	0.00	0.00	
13,500.00	89.32	179.89	7,231.57	-6,969.49	-195.24	6,969.10	0.00	0.00	0.00	
13,600.00	89.32	179.89	7,232.76	-7,069.48	-195.06	7,069.09	0.00	0.00	0.00	
13,700.00	89.32	179.89	7,233.94	-7,169.47	-194.87	7,169.09	0.00	0.00	0.00	
13,800.00	89.32	179.89	7,235.13	-7,269.47	-194.68	7,269.08	0.00	0.00	0.00	
13,900.00	89.32	179.89	7,236.32	-7,369.46	-194.50	7,369.07	0.00	0.00	0.00	
14,000.00	89.32	179.89	7,237.50	-7,469.45	-194.31	7,469.07	0.00	0.00	0.00	
14,100.00	89.32	179.89	7,238.69	-7,569.44	-194.12	7,569.06	0.00	0.00	0.00	
14,200.00	89.32	179.89	7,239.87	-7,669.44	-193.94	7,669.05	0.00	0.00	0.00	
14,300.00	89.32	179.89	7,241.06	-7,769.43	-193.75	7,769.04	0.00	0.00	0.00	
14,400.00	89.32	179.89	7,242.25	-7,869.42	-193.56	7,869.04	0.00	0.00	0.00	
14,500.00	89.32	179.89	7,243.43	-7,969.42	-193.37	7,969.03	0.00	0.00	0.00	
14,600.00	89.32	179.89	7,244.62	-8,069.41	-193.19	8,069.02	0.00	0.00	0.00	
14,700.00	89.32	179.89	7,245.80	-8,169.40	-193.00	8,169.02	0.00	0.00	0.00	
14,800.00	89.32	179.89	7,246.99	-8,269.39	-192.81	8,269.01	0.00	0.00	0.00	
14,900.00	89.32	179.89	7,248.18	-8,369.39	-192.63	8,369.00	0.00	0.00	0.00	
15,000.00	89.32	179.89	7,249.36	-8,469.38	-192.44	8,468.99	0.00	0.00	0.00	
15,100.00	89.32	179.89	7,250.55	-8,569.37	-192.25	8,568.99	0.00	0.00	0.00	
15,200.00	89.32	179.89	7,251.74	-8,669.37	-192.06	8,668.98	0.00	0.00	0.00	
15,300.00	89.32	179.89	7,252.92	-8,769.36	-191.88	8,768.97	0.00	0.00	0.00	
15,400.00	89.32	179.89	7,254.11	-8,869.35	-191.69	8,868.97	0.00	0.00	0.00	
15,500.00	89.32	179.89	7,255.29	-8,969.34	-191.50	8,968.96	0.00	0.00	0.00	
15,600.00	89.32	179.89	7,256.48	-9,069.34	-191.32	9,068.95	0.00	0.00	0.00	
15,700.00	89.32	179.89	7,257.67	-9,169.33	-191.13	9,168.95	0.00	0.00	0.00	
15,800.00	89.32	179.89	7,258.85	-9,269.32	-190.94	9,268.94	0.00	0.00	0.00	
15,900.00	89.32	179.89	7,260.04	-9,369.32	-190.76	9,368.93	0.00	0.00	0.00	
16,000.00	89.32	179.89	7,261.22	-9,469.31	-190.57	9,468.92	0.00	0.00	0.00	
16,100.00	89.32	179.89	7,262.41	-9,569.30	-190.38	9,568.92	0.00	0.00	0.00	
16,200.00	89.32	179.89	7,263.60	-9,669.29	-190.19	9,668.91	0.00	0.00	0.00	
16,300.00	89.32	179.89	7,264.78	-9,769.29	-190.01	9,768.90	0.00	0.00	0.00	
16,400.00	89.32	179.89	7,265.97	-9,869.28	-189.82	9,868.90	0.00	0.00	0.00	
16,487.02	89.32	179.89	7,267.00	-9,956.29	-189.66	9,955.91	0.00	0.00	0.00	
TD Well @ 16487.02ft										

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)		
HILGERS 9N-34HZ_Har	0.00	0.00	0.00	0.00	0.00	14,601,968.54	1,645,369.76	40.206605	-104.982260
- plan hits target center									
- Polygon									
Point 1			0.00	4.38	-1,012.77	14,601,972.72	1,644,356.99		
Point 2			0.00	16.10	-92.82	14,601,984.62	1,645,276.94		
Point 3			0.00	-861.14	-88.14	14,601,107.38	1,645,281.79		
Point 4			0.00	-2,185.10	-96.41	14,599,783.42	1,645,273.79		
Point 5			0.00	-3,509.05	-104.79	14,598,459.47	1,645,265.67		
Point 6			0.00	-4,836.82	-112.17	14,597,131.70	1,645,258.56		
Point 7			0.00	-6,164.58	-119.56	14,595,803.94	1,645,251.43		
Point 8			0.00	-7,500.34	-120.87	14,594,468.18	1,645,250.39		
Point 9			0.00	-8,836.06	-122.10	14,593,132.46	1,645,249.43		
Point 10			0.00	-10,176.82	-96.87	14,591,791.70	1,645,274.93		
Point 11			0.00	-11,057.61	-80.30	14,590,910.92	1,645,291.67		
Point 12			0.00	-11,054.28	-1,000.51	14,590,914.06	1,644,371.46		
Point 13			0.00	-10,181.50	-1,016.94	14,591,786.84	1,644,354.86		
Point 14			0.00	-8,837.60	-1,042.17	14,593,130.73	1,644,329.36		
Point 15			0.00	-7,505.44	-1,040.89	14,594,462.89	1,644,330.37		
Point 16			0.00	-6,173.33	-1,039.59	14,595,795.00	1,644,331.41		
Point 17			0.00	-4,845.89	-1,032.24	14,597,122.44	1,644,338.49		
Point 18			0.00	-3,518.45	-1,024.86	14,598,449.89	1,644,345.61		
Point 19			0.00	-2,198.70	-1,016.51	14,599,769.64	1,644,353.69		
Point 20			0.00	-878.95	-1,008.16	14,601,089.39	1,644,361.78		
Point 21			0.00	4.38	-1,012.77	14,601,972.72	1,644,356.99		
3N-R68W-Sec. 27_Secti	0.00	0.00	0.00	0.36	-60.03	14,601,968.89	1,645,309.73	40.206606	-104.982475
- plan misses target center by 60.03usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-901.61	-4,440.91	14,601,066.40	1,640,869.00		
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	14,598,470.64	1,646,113.26		
Point 5			0.00	-6,154.53	782.53	14,595,814.52	1,646,093.49		
Point 6			0.00	-6,204.04	-4,436.84	14,595,763.97	1,640,874.13		
HILGERS 9N-34HZ_46C	0.00	0.00	0.00	0.00	0.00	14,601,968.54	1,645,369.76	40.206605	-104.982260
- plan hits target center									
- Polygon									
Point 1			0.00	-9,709.16	-556.44	14,592,259.27	1,644,815.26		
Point 2			0.00	-9,710.46	-522.07	14,592,257.98	1,644,849.63		
Point 3			0.00	-9,714.38	-487.14	14,592,254.06	1,644,884.56		
Point 4			0.00	-9,720.88	-452.60	14,592,247.57	1,644,919.10		
Point 5			0.00	-9,729.96	-418.64	14,592,238.50	1,644,953.07		
Point 6			0.00	-9,741.55	-385.46	14,592,226.91	1,644,986.25		
Point 7			0.00	-9,755.58	-353.24	14,592,212.89	1,645,018.47		
Point 8			0.00	-9,771.99	-322.16	14,592,196.49	1,645,049.56		
Point 9			0.00	-9,790.68	-292.38	14,592,177.80	1,645,079.34		
Point 10			0.00	-9,811.53	-264.09	14,592,156.96	1,645,107.63		
Point 11			0.00	-9,834.44	-237.44	14,592,134.05	1,645,134.29		
Point 12			0.00	-9,859.28	-212.57	14,592,109.22	1,645,159.16		
Point 13			0.00	-9,885.91	-189.63	14,592,082.59	1,645,182.11		
Point 14			0.00	-9,914.17	-168.74	14,592,054.34	1,645,203.00		
Point 15			0.00	-9,943.92	-150.02	14,592,024.59	1,645,221.73		
Point 16			0.00	-9,974.99	-133.58	14,591,993.52	1,645,238.18		
Point 17			0.00	-10,007.19	-119.51	14,591,961.33	1,645,252.25		
Point 18			0.00	-10,040.36	-107.88	14,591,928.16	1,645,263.89		
Point 19			0.00	-10,074.31	-98.76	14,591,894.21	1,645,273.02		
Point 20			0.00	-10,108.84	-92.21	14,591,859.68	1,645,279.57		
Point 21			0.00	-10,143.76	-88.25	14,591,824.76	1,645,283.54		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 22	0.00	-10,178.88	-86.92	14,591,789.64	1,645,284.88
Point 23	0.00	-10,214.01	-88.21	14,591,754.51	1,645,283.59
Point 24	0.00	-10,248.93	-92.12	14,591,719.59	1,645,279.69
Point 25	0.00	-10,283.47	-98.64	14,591,685.05	1,645,273.18
Point 26	0.00	-10,317.42	-107.72	14,591,651.10	1,645,264.10
Point 27	0.00	-10,350.61	-119.30	14,591,617.91	1,645,252.53
Point 28	0.00	-10,382.83	-133.34	14,591,585.68	1,645,238.50
Point 29	0.00	-10,413.91	-149.75	14,591,554.60	1,645,222.09
Point 30	0.00	-10,443.68	-168.42	14,591,524.83	1,645,203.43
Point 31	0.00	-10,471.98	-189.28	14,591,496.52	1,645,182.58
Point 32	0.00	-10,498.63	-212.18	14,591,469.87	1,645,159.68
Point 33	0.00	-10,523.50	-237.03	14,591,444.99	1,645,134.84
Point 34	0.00	-10,546.44	-263.65	14,591,422.05	1,645,108.22
Point 35	0.00	-10,567.33	-291.92	14,591,401.15	1,645,079.95
Point 36	0.00	-10,586.04	-321.67	14,591,382.44	1,645,050.21
Point 37	0.00	-10,602.48	-352.73	14,591,365.99	1,645,019.15
Point 38	0.00	-10,616.56	-384.94	14,591,351.90	1,644,986.94
Point 39	0.00	-10,628.19	-418.11	14,591,340.27	1,644,953.78
Point 40	0.00	-10,637.30	-452.05	14,591,331.15	1,644,919.84
Point 41	0.00	-10,643.86	-486.58	14,591,324.58	1,644,885.31
Point 42	0.00	-10,647.82	-521.50	14,591,320.62	1,644,850.39
Point 43	0.00	-10,649.16	-557.00	14,591,319.27	1,644,814.89
Point 44	0.00	-10,647.86	-591.75	14,591,320.56	1,644,780.14
Point 45	0.00	-10,643.95	-626.68	14,591,324.47	1,644,745.21
Point 46	0.00	-10,637.43	-661.22	14,591,330.98	1,644,710.67
Point 47	0.00	-10,628.36	-695.17	14,591,340.04	1,644,676.72
Point 48	0.00	-10,616.77	-728.36	14,591,351.63	1,644,643.52
Point 49	0.00	-10,602.73	-760.57	14,591,365.66	1,644,611.31
Point 50	0.00	-10,586.33	-791.66	14,591,382.05	1,644,580.22
Point 51	0.00	-10,567.64	-821.44	14,591,400.74	1,644,550.43
Point 52	0.00	-10,546.79	-849.72	14,591,421.58	1,644,522.15
Point 53	0.00	-10,523.88	-876.38	14,591,444.49	1,644,495.49
Point 54	0.00	-10,499.04	-901.24	14,591,469.32	1,644,470.62
Point 55	0.00	-10,472.41	-924.19	14,591,495.95	1,644,447.67
Point 56	0.00	-10,444.15	-945.07	14,591,524.20	1,644,426.78
Point 57	0.00	-10,414.40	-963.80	14,591,553.95	1,644,408.04
Point 58	0.00	-10,383.33	-980.24	14,591,585.02	1,644,391.60
Point 59	0.00	-10,351.13	-994.31	14,591,617.21	1,644,377.52
Point 60	0.00	-10,317.96	-1,005.94	14,591,650.38	1,644,365.88
Point 61	0.00	-10,284.01	-1,015.05	14,591,684.33	1,644,356.77
Point 62	0.00	-10,249.48	-1,021.61	14,591,718.86	1,644,350.20
Point 63	0.00	-10,214.56	-1,025.57	14,591,753.78	1,644,346.23
Point 64	0.00	-10,179.44	-1,026.90	14,591,788.90	1,644,344.90
Point 65	0.00	-10,144.32	-1,025.60	14,591,824.02	1,644,346.19
Point 66	0.00	-10,109.39	-1,021.70	14,591,858.95	1,644,350.08
Point 67	0.00	-10,074.85	-1,015.18	14,591,893.49	1,644,356.60
Point 68	0.00	-10,040.89	-1,006.10	14,591,927.45	1,644,365.67
Point 69	0.00	-10,007.72	-994.52	14,591,960.62	1,644,377.24
Point 70	0.00	-9,975.49	-980.48	14,591,992.86	1,644,391.28
Point 71	0.00	-9,944.40	-964.07	14,592,023.95	1,644,407.68
Point 72	0.00	-9,914.64	-945.40	14,592,053.71	1,644,426.34
Point 73	0.00	-9,886.34	-924.54	14,592,082.02	1,644,447.20
Point 74	0.00	-9,859.68	-901.63	14,592,108.68	1,644,470.10
Point 75	0.00	-9,834.82	-876.79	14,592,133.55	1,644,494.94
Point 76	0.00	-9,811.87	-850.17	14,592,156.50	1,644,521.55
Point 77	0.00	-9,790.99	-821.89	14,592,177.39	1,644,549.83
Point 78	0.00	-9,772.28	-792.15	14,592,196.10	1,644,579.57
Point 79	0.00	-9,755.83	-761.09	14,592,212.56	1,644,610.62
Point 80	0.00	-9,741.76	-728.87	14,592,226.64	1,644,642.84
Point 81	0.00	-9,730.13	-695.71	14,592,238.27	1,644,676.00
Point 82	0.00	-9,721.01	-661.77	14,592,247.40	1,644,709.93
Point 83	0.00	-9,714.46	-627.24	14,592,253.96	1,644,744.46
Point 84	0.00	-9,710.50	-592.31	14,592,257.92	1,644,779.39
Point 85	0.00	-9,709.16	-557.19	14,592,259.27	1,644,814.51

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 86	0.00	-9,729.15	-556.44	14,592,239.28	1,644,815.27
Point 87	0.00	-9,730.38	-590.07	14,592,238.04	1,644,781.64
Point 88	0.00	-9,734.11	-623.52	14,592,234.31	1,644,748.19
Point 89	0.00	-9,740.33	-656.59	14,592,228.08	1,644,715.12
Point 90	0.00	-9,749.01	-689.10	14,592,219.39	1,644,682.61
Point 91	0.00	-9,760.09	-720.89	14,592,208.31	1,644,650.82
Point 92	0.00	-9,773.51	-751.74	14,592,194.88	1,644,619.98
Point 93	0.00	-9,789.21	-781.51	14,592,179.17	1,644,590.21
Point 94	0.00	-9,807.08	-810.03	14,592,161.30	1,644,561.69
Point 95	0.00	-9,827.04	-837.12	14,592,141.33	1,644,534.61
Point 96	0.00	-9,848.96	-862.65	14,592,119.41	1,644,509.08
Point 97	0.00	-9,872.74	-886.47	14,592,095.62	1,644,485.27
Point 98	0.00	-9,898.22	-908.44	14,592,070.14	1,644,463.30
Point 99	0.00	-9,925.28	-928.46	14,592,043.08	1,644,443.29
Point 100	0.00	-9,953.76	-946.39	14,592,014.59	1,644,425.36
Point 101	0.00	-9,983.49	-962.15	14,591,984.86	1,644,409.61
Point 102	0.00	-10,014.32	-975.64	14,591,954.03	1,644,396.12
Point 103	0.00	-10,046.08	-986.78	14,591,922.26	1,644,384.99
Point 104	0.00	-10,078.58	-995.53	14,591,889.76	1,644,376.25
Point 105	0.00	-10,111.63	-1,001.82	14,591,856.71	1,644,369.96
Point 106	0.00	-10,145.06	-1,005.62	14,591,823.28	1,644,366.17
Point 107	0.00	-10,178.69	-1,006.92	14,591,789.65	1,644,364.88
Point 108	0.00	-10,212.32	-1,005.69	14,591,756.02	1,644,366.11
Point 109	0.00	-10,245.77	-1,001.95	14,591,722.57	1,644,369.86
Point 110	0.00	-10,278.85	-995.74	14,591,689.49	1,644,376.08
Point 111	0.00	-10,311.36	-987.06	14,591,656.98	1,644,384.76
Point 112	0.00	-10,343.13	-975.97	14,591,625.22	1,644,395.86
Point 113	0.00	-10,373.99	-962.55	14,591,594.36	1,644,409.29
Point 114	0.00	-10,403.77	-946.85	14,591,564.58	1,644,424.99
Point 115	0.00	-10,432.27	-928.98	14,591,536.09	1,644,442.87
Point 116	0.00	-10,459.37	-909.03	14,591,508.99	1,644,462.82
Point 117	0.00	-10,484.90	-887.10	14,591,483.46	1,644,484.76
Point 118	0.00	-10,508.72	-863.33	14,591,459.65	1,644,508.53
Point 119	0.00	-10,530.70	-837.85	14,591,437.67	1,644,534.02
Point 120	0.00	-10,550.71	-810.79	14,591,417.67	1,644,561.08
Point 121	0.00	-10,568.65	-782.32	14,591,399.73	1,644,589.55
Point 122	0.00	-10,584.40	-752.58	14,591,383.99	1,644,619.30
Point 123	0.00	-10,597.89	-721.74	14,591,370.51	1,644,650.14
Point 124	0.00	-10,609.04	-690.00	14,591,359.36	1,644,681.88
Point 125	0.00	-10,617.78	-657.50	14,591,350.63	1,644,714.38
Point 126	0.00	-10,624.07	-624.44	14,591,344.35	1,644,747.45
Point 127	0.00	-10,627.88	-591.00	14,591,340.54	1,644,780.89
Point 128	0.00	-10,629.15	-557.00	14,591,339.28	1,644,814.89
Point 129	0.00	-10,627.94	-523.74	14,591,340.50	1,644,848.15
Point 130	0.00	-10,624.21	-490.30	14,591,344.23	1,644,881.59
Point 131	0.00	-10,617.98	-457.23	14,591,350.47	1,644,914.65
Point 132	0.00	-10,609.31	-424.71	14,591,359.15	1,644,947.17
Point 133	0.00	-10,598.23	-392.93	14,591,370.23	1,644,978.95
Point 134	0.00	-10,584.80	-362.07	14,591,383.67	1,645,009.81
Point 135	0.00	-10,569.11	-332.31	14,591,399.36	1,645,039.56
Point 136	0.00	-10,551.23	-303.79	14,591,417.25	1,645,068.08
Point 137	0.00	-10,531.28	-276.70	14,591,437.21	1,645,095.17
Point 138	0.00	-10,509.35	-251.17	14,591,459.14	1,645,120.69
Point 139	0.00	-10,485.58	-227.34	14,591,482.92	1,645,144.52
Point 140	0.00	-10,460.09	-205.37	14,591,508.41	1,645,166.48
Point 141	0.00	-10,433.04	-185.36	14,591,535.46	1,645,186.49
Point 142	0.00	-10,404.56	-167.42	14,591,563.95	1,645,204.42
Point 143	0.00	-10,374.82	-151.67	14,591,593.69	1,645,220.17
Point 144	0.00	-10,344.00	-138.18	14,591,624.51	1,645,233.65
Point 145	0.00	-10,312.24	-127.03	14,591,656.28	1,645,244.79
Point 146	0.00	-10,279.75	-118.29	14,591,688.77	1,645,253.53
Point 147	0.00	-10,246.69	-111.99	14,591,721.83	1,645,259.82
Point 148	0.00	-10,213.25	-108.20	14,591,755.27	1,645,263.60
Point 149	0.00	-10,179.62	-106.90	14,591,788.90	1,645,264.90

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 150	0.00	-10,145.99	-108.12	14,591,822.53	1,645,263.67			
Point 151	0.00	-10,112.55	-111.86	14,591,855.97	1,645,259.92			
Point 152	0.00	-10,079.47	-118.08	14,591,889.05	1,645,253.70			
Point 153	0.00	-10,046.96	-126.75	14,591,921.56	1,645,245.02			
Point 154	0.00	-10,015.19	-137.84	14,591,953.32	1,645,233.92			
Point 155	0.00	-9,984.32	-151.26	14,591,984.19	1,645,220.50			
Point 156	0.00	-9,954.56	-166.95	14,592,013.95	1,645,204.80			
Point 157	0.00	-9,926.05	-184.83	14,592,042.45	1,645,186.92			
Point 158	0.00	-9,898.94	-204.79	14,592,069.56	1,645,166.95			
Point 159	0.00	-9,873.42	-226.72	14,592,095.08	1,645,145.02			
Point 160	0.00	-9,849.59	-250.48	14,592,118.90	1,645,121.25			
Point 161	0.00	-9,827.62	-275.97	14,592,140.87	1,645,095.76			
Point 162	0.00	-9,807.60	-303.03	14,592,160.88	1,645,068.69			
Point 163	0.00	-9,789.68	-331.50	14,592,178.79	1,645,040.22			
Point 164	0.00	-9,773.92	-361.24	14,592,194.55	1,645,010.48			
Point 165	0.00	-9,760.43	-392.07	14,592,208.03	1,644,979.64			
Point 166	0.00	-9,749.28	-423.82	14,592,219.18	1,644,947.89			
Point 167	0.00	-9,740.53	-456.32	14,592,227.92	1,644,915.39			
Point 168	0.00	-9,734.25	-489.38	14,592,234.19	1,644,882.33			
Point 169	0.00	-9,730.44	-522.82	14,592,238.00	1,644,848.89			
Point 170	0.00	-9,729.15	-557.19	14,592,239.28	1,644,814.52			
Point 171	0.00	-9,709.16	-556.44	14,592,259.27	1,644,815.26			
HILGERS 9N-34HZ_46C	0.00	0.00	0.00	0.00	14,601,968.54	1,645,369.76	40.206605	-104.982260
- plan hits target center								
- Polygon								
Point 1	0.00	-400.05	-547.64	14,601,568.38	1,644,822.20			
Point 2	0.00	-401.34	-513.26	14,601,567.10	1,644,856.58			
Point 3	0.00	-405.26	-478.33	14,601,563.19	1,644,891.51			
Point 4	0.00	-411.77	-443.79	14,601,556.68	1,644,926.05			
Point 5	0.00	-420.84	-409.83	14,601,547.62	1,644,960.02			
Point 6	0.00	-432.44	-376.65	14,601,536.03	1,644,993.20			
Point 7	0.00	-446.47	-344.42	14,601,522.00	1,645,025.43			
Point 8	0.00	-462.87	-313.35	14,601,505.61	1,645,056.50			
Point 9	0.00	-481.56	-283.57	14,601,486.92	1,645,086.29			
Point 10	0.00	-502.41	-255.29	14,601,466.08	1,645,114.57			
Point 11	0.00	-525.32	-228.63	14,601,443.18	1,645,141.24			
Point 12	0.00	-550.16	-203.77	14,601,418.34	1,645,166.10			
Point 13	0.00	-576.79	-180.82	14,601,391.71	1,645,189.06			
Point 14	0.00	-605.05	-159.93	14,601,363.46	1,645,209.95			
Point 15	0.00	-634.81	-141.21	14,601,333.70	1,645,228.68			
Point 16	0.00	-665.87	-124.77	14,601,302.65	1,645,245.12			
Point 17	0.00	-698.07	-110.69	14,601,270.45	1,645,259.21			
Point 18	0.00	-731.24	-99.07	14,601,237.28	1,645,270.84			
Point 19	0.00	-765.19	-89.95	14,601,203.33	1,645,279.96			
Point 20	0.00	-799.72	-83.39	14,601,168.80	1,645,286.53			
Point 21	0.00	-834.64	-79.44	14,601,133.89	1,645,290.49			
Point 22	0.00	-869.76	-78.11	14,601,098.77	1,645,291.83			
Point 23	0.00	-904.89	-79.40	14,601,063.64	1,645,290.54			
Point 24	0.00	-939.82	-83.31	14,601,028.70	1,645,286.64			
Point 25	0.00	-974.35	-89.83	14,600,994.17	1,645,280.13			
Point 26	0.00	-1,008.30	-98.91	14,600,960.22	1,645,271.05			
Point 27	0.00	-1,041.49	-110.49	14,600,927.03	1,645,259.48			
Point 28	0.00	-1,073.71	-124.53	14,600,894.81	1,645,245.45			
Point 29	0.00	-1,104.80	-140.94	14,600,863.71	1,645,229.04			
Point 30	0.00	-1,134.56	-159.61	14,600,833.95	1,645,210.38			
Point 31	0.00	-1,162.86	-180.47	14,600,805.65	1,645,189.52			
Point 32	0.00	-1,189.51	-203.38	14,600,778.99	1,645,166.62			
Point 33	0.00	-1,214.38	-228.22	14,600,754.12	1,645,141.78			
Point 34	0.00	-1,237.32	-254.84	14,600,731.17	1,645,115.17			
Point 35	0.00	-1,258.21	-283.11	14,600,710.27	1,645,086.90			
Point 36	0.00	-1,276.92	-312.86	14,600,691.56	1,645,057.16			
Point 37	0.00	-1,293.37	-343.92	14,600,675.10	1,645,026.10			
Point 38	0.00	-1,307.44	-376.13	14,600,661.03	1,644,993.89			

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 39	0.00	-1,319.07	-409.30	14,600,649.39	1,644,960.73
Point 40	0.00	-1,328.19	-443.24	14,600,640.26	1,644,926.79
Point 41	0.00	-1,334.74	-477.77	14,600,633.71	1,644,892.26
Point 42	0.00	-1,338.70	-512.69	14,600,629.74	1,644,857.34
Point 43	0.00	-1,340.05	-548.19	14,600,628.38	1,644,821.84
Point 44	0.00	-1,338.74	-582.94	14,600,629.68	1,644,787.09
Point 45	0.00	-1,334.83	-617.87	14,600,633.59	1,644,752.16
Point 46	0.00	-1,328.31	-652.41	14,600,640.10	1,644,717.62
Point 47	0.00	-1,319.24	-686.37	14,600,649.16	1,644,683.66
Point 48	0.00	-1,307.65	-719.55	14,600,660.75	1,644,650.47
Point 49	0.00	-1,293.61	-751.77	14,600,674.78	1,644,618.25
Point 50	0.00	-1,277.21	-782.85	14,600,691.17	1,644,587.17
Point 51	0.00	-1,258.52	-812.63	14,600,709.86	1,644,557.38
Point 52	0.00	-1,237.67	-840.91	14,600,730.70	1,644,529.10
Point 53	0.00	-1,214.76	-867.57	14,600,753.61	1,644,502.43
Point 54	0.00	-1,189.93	-892.44	14,600,778.43	1,644,477.56
Point 55	0.00	-1,163.29	-915.38	14,600,805.07	1,644,454.61
Point 56	0.00	-1,135.03	-936.27	14,600,833.32	1,644,433.72
Point 57	0.00	-1,105.28	-954.99	14,600,863.07	1,644,414.99
Point 58	0.00	-1,074.22	-971.43	14,600,894.13	1,644,398.55
Point 59	0.00	-1,042.01	-985.50	14,600,926.33	1,644,384.47
Point 60	0.00	-1,008.85	-997.13	14,600,959.49	1,644,372.83
Point 61	0.00	-974.89	-1,006.25	14,600,993.45	1,644,363.71
Point 62	0.00	-940.36	-1,012.80	14,601,027.98	1,644,357.15
Point 63	0.00	-905.44	-1,016.76	14,601,062.90	1,644,353.18
Point 64	0.00	-870.32	-1,018.09	14,601,098.02	1,644,351.85
Point 65	0.00	-835.20	-1,016.80	14,601,133.14	1,644,353.13
Point 66	0.00	-800.27	-1,012.89	14,601,168.07	1,644,357.03
Point 67	0.00	-765.73	-1,006.37	14,601,202.61	1,644,363.54
Point 68	0.00	-731.78	-997.29	14,601,236.56	1,644,372.62
Point 69	0.00	-698.60	-985.70	14,601,269.74	1,644,384.20
Point 70	0.00	-666.37	-971.67	14,601,301.98	1,644,398.23
Point 71	0.00	-635.28	-955.26	14,601,333.07	1,644,414.63
Point 72	0.00	-605.52	-936.59	14,601,362.83	1,644,433.29
Point 73	0.00	-577.22	-915.73	14,601,391.14	1,644,454.15
Point 74	0.00	-550.57	-892.82	14,601,417.79	1,644,477.05
Point 75	0.00	-525.70	-867.98	14,601,442.67	1,644,501.89
Point 76	0.00	-502.76	-841.36	14,601,465.61	1,644,528.50
Point 77	0.00	-481.87	-813.09	14,601,486.51	1,644,556.77
Point 78	0.00	-463.16	-783.34	14,601,505.22	1,644,586.51
Point 79	0.00	-446.71	-752.27	14,601,521.68	1,644,617.58
Point 80	0.00	-432.64	-720.07	14,601,535.76	1,644,649.78
Point 81	0.00	-421.01	-686.90	14,601,547.39	1,644,682.95
Point 82	0.00	-411.89	-652.96	14,601,556.52	1,644,716.88
Point 83	0.00	-405.34	-618.43	14,601,563.08	1,644,751.41
Point 84	0.00	-401.38	-583.51	14,601,567.04	1,644,786.33
Point 85	0.00	-400.05	-548.38	14,601,568.38	1,644,821.46
Point 86	0.00	-420.04	-547.64	14,601,548.39	1,644,822.21
Point 87	0.00	-421.26	-581.27	14,601,547.16	1,644,788.58
Point 88	0.00	-424.99	-614.71	14,601,543.43	1,644,755.14
Point 89	0.00	-431.22	-647.78	14,601,537.19	1,644,722.07
Point 90	0.00	-439.89	-680.29	14,601,528.52	1,644,689.56
Point 91	0.00	-450.97	-712.08	14,601,517.43	1,644,657.77
Point 92	0.00	-464.40	-742.93	14,601,503.99	1,644,626.92
Point 93	0.00	-480.09	-772.70	14,601,488.30	1,644,597.16
Point 94	0.00	-497.96	-801.21	14,601,470.42	1,644,568.65
Point 95	0.00	-517.92	-828.31	14,601,450.46	1,644,541.56
Point 96	0.00	-539.84	-853.84	14,601,428.53	1,644,516.03
Point 97	0.00	-563.62	-877.66	14,601,404.75	1,644,492.21
Point 98	0.00	-589.10	-899.64	14,601,379.26	1,644,470.24
Point 99	0.00	-616.16	-919.65	14,601,352.20	1,644,450.23
Point 100	0.00	-644.64	-937.58	14,601,323.71	1,644,432.31
Point 101	0.00	-674.37	-953.34	14,601,293.98	1,644,416.56
Point 102	0.00	-705.20	-966.83	14,601,263.15	1,644,403.07

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 103	0.00	-736.96	-977.97	14,601,231.39	1,644,391.94
Point 104	0.00	-769.46	-986.72	14,601,198.88	1,644,383.20
Point 105	0.00	-802.52	-993.02	14,601,165.82	1,644,376.90
Point 106	0.00	-835.95	-996.81	14,601,132.39	1,644,373.12
Point 107	0.00	-869.58	-998.11	14,601,098.76	1,644,371.83
Point 108	0.00	-903.21	-996.89	14,601,065.13	1,644,373.05
Point 109	0.00	-936.66	-993.15	14,601,031.68	1,644,376.80
Point 110	0.00	-969.73	-986.93	14,600,998.61	1,644,383.03
Point 111	0.00	-1,002.24	-978.26	14,600,966.11	1,644,391.70
Point 112	0.00	-1,034.01	-967.17	14,600,934.34	1,644,402.80
Point 113	0.00	-1,064.87	-953.74	14,600,903.48	1,644,416.23
Point 114	0.00	-1,094.65	-938.04	14,600,873.70	1,644,431.94
Point 115	0.00	-1,123.15	-920.17	14,600,845.21	1,644,449.82
Point 116	0.00	-1,150.25	-900.21	14,600,818.11	1,644,469.78
Point 117	0.00	-1,175.78	-878.29	14,600,792.59	1,644,491.71
Point 118	0.00	-1,199.60	-854.52	14,600,768.77	1,644,515.48
Point 119	0.00	-1,221.58	-829.04	14,600,746.80	1,644,540.97
Point 120	0.00	-1,241.59	-801.98	14,600,726.79	1,644,568.03
Point 121	0.00	-1,259.53	-773.51	14,600,708.86	1,644,596.50
Point 122	0.00	-1,275.29	-743.77	14,600,693.10	1,644,626.25
Point 123	0.00	-1,288.77	-712.93	14,600,679.63	1,644,657.09
Point 124	0.00	-1,299.92	-681.18	14,600,668.48	1,644,688.84
Point 125	0.00	-1,308.67	-648.69	14,600,659.74	1,644,721.33
Point 126	0.00	-1,314.95	-615.63	14,600,653.47	1,644,754.39
Point 127	0.00	-1,318.76	-582.19	14,600,649.66	1,644,787.84
Point 128	0.00	-1,320.04	-548.19	14,600,648.39	1,644,821.84
Point 129	0.00	-1,318.82	-514.93	14,600,649.62	1,644,855.10
Point 130	0.00	-1,315.09	-481.49	14,600,653.35	1,644,888.53
Point 131	0.00	-1,308.87	-448.42	14,600,659.58	1,644,921.60
Point 132	0.00	-1,300.19	-415.90	14,600,668.27	1,644,954.12
Point 133	0.00	-1,289.11	-384.12	14,600,679.35	1,644,985.90
Point 134	0.00	-1,275.68	-353.27	14,600,692.79	1,645,016.75
Point 135	0.00	-1,259.99	-323.50	14,600,708.49	1,645,046.51
Point 136	0.00	-1,242.12	-294.98	14,600,726.36	1,645,075.03
Point 137	0.00	-1,222.16	-267.89	14,600,746.33	1,645,102.12
Point 138	0.00	-1,200.24	-242.35	14,600,768.25	1,645,127.65
Point 139	0.00	-1,176.46	-218.54	14,600,792.04	1,645,151.46
Point 140	0.00	-1,150.98	-196.56	14,600,817.52	1,645,173.43
Point 141	0.00	-1,123.92	-176.55	14,600,844.59	1,645,193.44
Point 142	0.00	-1,095.44	-158.61	14,600,873.07	1,645,211.37
Point 143	0.00	-1,065.71	-142.86	14,600,902.80	1,645,227.11
Point 144	0.00	-1,034.88	-129.37	14,600,933.64	1,645,240.60
Point 145	0.00	-1,003.13	-118.23	14,600,965.39	1,645,251.73
Point 146	0.00	-970.63	-109.48	14,600,997.89	1,645,260.48
Point 147	0.00	-937.57	-103.19	14,601,030.95	1,645,266.76
Point 148	0.00	-904.13	-99.39	14,601,064.39	1,645,270.55
Point 149	0.00	-870.51	-98.09	14,601,098.01	1,645,271.85
Point 150	0.00	-836.87	-99.31	14,601,131.65	1,645,270.62
Point 151	0.00	-803.43	-103.05	14,601,165.09	1,645,266.87
Point 152	0.00	-770.35	-109.27	14,601,198.17	1,645,260.65
Point 153	0.00	-737.84	-117.95	14,601,230.68	1,645,251.96
Point 154	0.00	-706.07	-129.03	14,601,262.45	1,645,240.87
Point 155	0.00	-675.21	-142.46	14,601,293.30	1,645,227.44
Point 156	0.00	-645.44	-158.15	14,601,323.07	1,645,211.74
Point 157	0.00	-616.93	-176.03	14,601,351.58	1,645,193.86
Point 158	0.00	-589.83	-195.98	14,601,378.67	1,645,173.90
Point 159	0.00	-564.30	-217.91	14,601,404.20	1,645,151.96
Point 160	0.00	-540.48	-241.67	14,601,428.01	1,645,128.20
Point 161	0.00	-518.50	-267.16	14,601,449.99	1,645,102.71
Point 162	0.00	-498.49	-294.21	14,601,469.99	1,645,075.65
Point 163	0.00	-480.56	-322.69	14,601,487.92	1,645,047.17
Point 164	0.00	-464.80	-352.43	14,601,503.67	1,645,017.42
Point 165	0.00	-451.31	-383.27	14,601,517.15	1,644,986.58
Point 166	0.00	-440.16	-415.01	14,601,528.30	1,644,954.84

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 167	0.00	-431.42	-447.51	14,601,537.03	1,644,922.34		
Point 168	0.00	-425.13	-480.57	14,601,543.32	1,644,889.28		
Point 169	0.00	-421.33	-514.01	14,601,547.11	1,644,855.84		
Point 170	0.00	-420.04	-548.38	14,601,548.39	1,644,821.47		
Point 171	0.00	-400.05	-547.64	14,601,568.38	1,644,822.20		
HILGERS 9N-34HZ_SHI	0.00	0.00	0.00	0.00	14,601,968.54	1,645,369.76	40.206605 -104.982260
- plan hits target center							
- Point							
3N-R68W-Sec. 34_Secti	0.00	0.00	0.00	0.36 -60.03	14,601,968.89	1,645,309.73	40.206606 -104.982475
- plan misses target center by 60.03usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)							
- Polygon							
Point 1	0.00	-6,204.04	-4,436.84	14,595,763.97	1,640,874.13		
Point 2	0.00	-6,154.53	782.53	14,595,814.52	1,646,093.49		
Point 3	0.00	-11,510.48	839.68	14,590,458.58	1,646,151.71		
Point 4	0.00	-11,511.55	-4,434.16	14,590,456.46	1,640,877.87		
3N-R68W-Sec. 26_Secti	0.00	0.00	0.00	0.36 -60.03	14,601,968.89	1,645,309.73	40.206606 -104.982475
- plan misses target center by 60.03usft 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	14,601,153.71	1,651,417.15		
Point 3	0.00	-6,122.12	6,096.28	14,595,847.99	1,651,407.24		
Point 4	0.00	-6,154.53	782.53	14,595,814.52	1,646,093.49		
3N-R68W-Sec. 22_Secti	0.00	0.00	15.00	2,787.96 245.11	14,604,756.55	1,645,614.32	40.214261 -104.981382
- plan misses target center by 2798.72usft at 15.00usft MD (15.00 TVD, 0.00 N, 0.00 E)							
- Polygon							
Point 1	15.00	1,609.13	-4,756.64	14,606,364.73	1,640,857.36		
Point 2	15.00	1,644.10	-2,132.46	14,606,400.23	1,643,481.53		
Point 3	15.00	1,698.21	493.16	14,606,454.86	1,646,107.14		
Point 4	15.00	-967.02	505.37	14,603,789.63	1,646,119.88		
Point 5	15.00	-3,630.21	518.25	14,601,126.45	1,646,133.29		
Point 6	15.00	-3,681.09	-2,110.42	14,601,075.04	1,643,504.63		
Point 7	15.00	-3,689.13	-4,746.07	14,601,066.47	1,640,868.99		
Point 8	15.00	-1,042.08	-4,750.66	14,603,713.52	1,640,863.87		
HILGERS 9N-34HZ_BHI	0.00	0.00	7,267.00	-9,956.30 -189.66	14,592,012.21	1,645,182.09	40.179264 -104.982939
- plan hits target center							
- Point							

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,814.34	1,800.00	9 5/8"	9-5/8	13-1/2	
7,549.50	7,161.00	7"	7	8-3/4	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
316.00	316.00	Fox Hills				
4,188.63	4,156.00	Sussex				
7,092.45	6,998.90	Sharon Springs				
7,220.04	7,073.90	Niobrara Top				
7,368.77	7,133.40	Niobrara B Bench				
9,564.95	7,184.90	Niobrara C Bench				

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 9N-34HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5016.00usft (D Rig)
Site:	3N-68W-22 Hilgers 16-22HZ Pad	North Reference:	True
Well:	HILGERS 9N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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
850.00	847.54	-41.52	-22.08	End Nudge @ 850.00ft
3,150.00	3,119.22	-359.21	-190.99	Begin Drop @ 3150.00ft
3,600.00	3,567.37	-390.35	-207.55	End Drop @ 3600.00ft
6,557.05	6,524.42	-390.35	-207.55	KOP @ 6557.05ft
7,100.00	7,003.90	-608.18	-207.14	DLS = 9°/100'
7,549.50	7,161.00	-1,019.42	-206.38	End Build @ 7549.50ft
16,487.02	7,267.00	-9,956.29	-189.66	TD Well @ 16487.02ft