

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

HILGERS 24N-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 24N-34HZ
 Wellbore: Plan A
 Design: Permit Rev-1

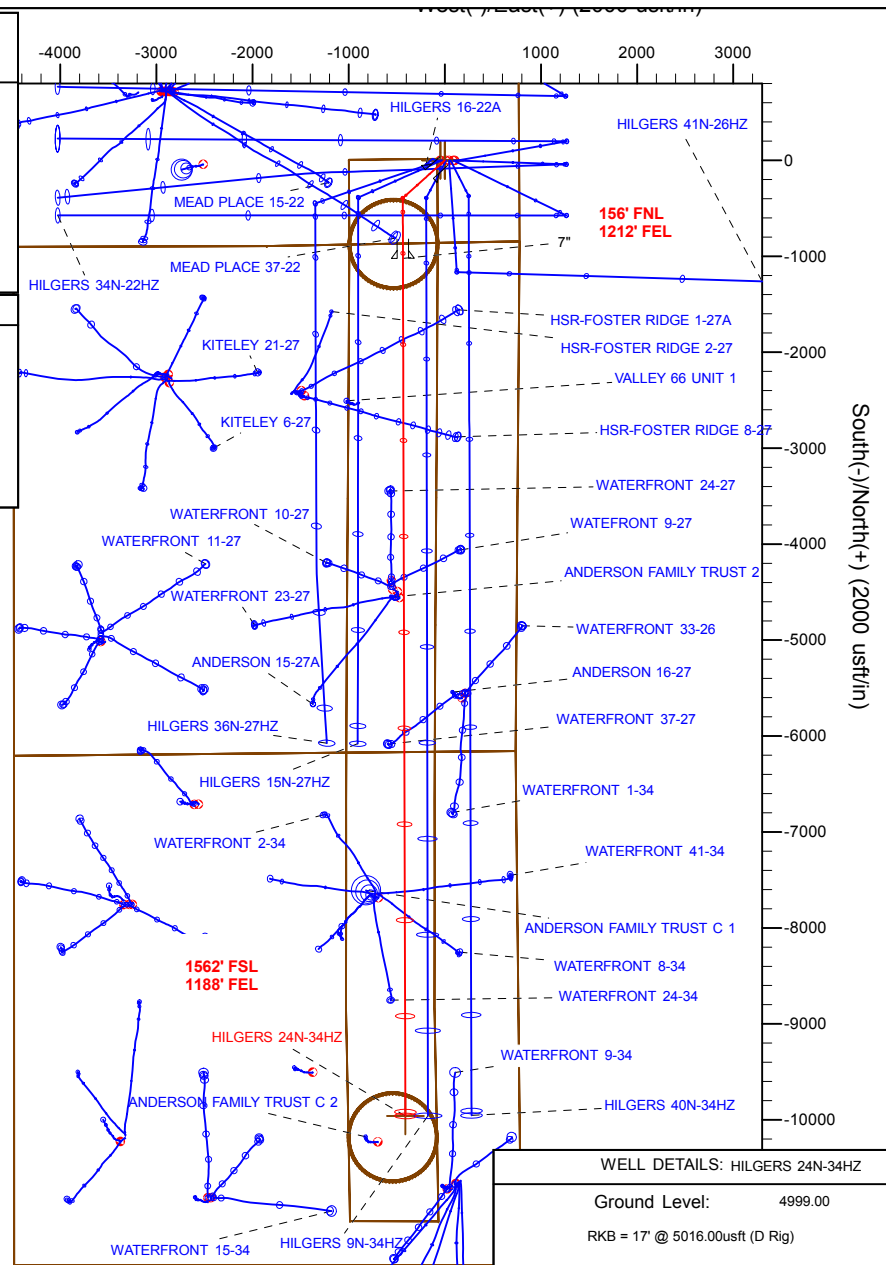
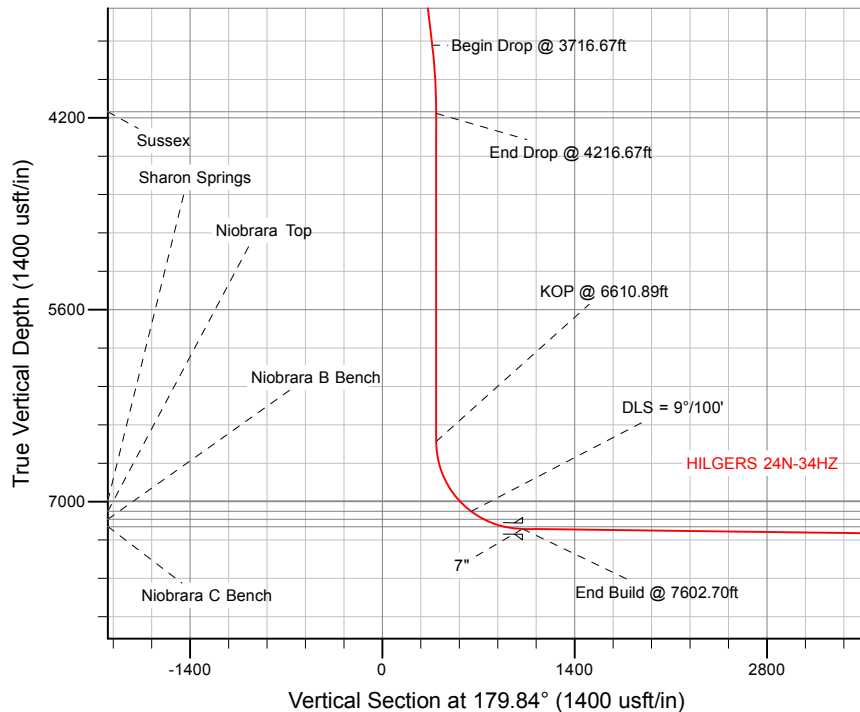
US ROCKIES WATTENBERG PLANNING

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	916.67	10.00	228.00	913.29	-38.83	-43.12	1.50	228.00	38.71	
4	3716.67	10.00	228.00	3670.75	-364.17	-404.45	0.00	0.00	363.04	
5	4216.67	0.00	0.00	4168.21	-393.29	-436.80	2.00	180.00	392.07	
6	6610.89	0.00	0.00	6562.43	-393.29	-436.80	0.00	0.00	392.07	
7	7602.70	89.26	179.84	7199.00	-1021.72	-435.00	9.00	179.84	1020.50	
8	16540.22	89.26	179.84	7314.00	-9958.47	-409.47	0.00	0.00	9957.29	HILGERS 24N-34HZ_TOE

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
HILGERS 24N-34HZ_SHL	0.00	0.00	0.00	40.206606	-104.982314	Point
HILGERS 24N-34HZ_TOE	7314.00	-9958.47	-409.47	40.179259	-104.983780	Point



WELL DETAILS: HILGERS 24N-34HZ	
Ground Level:	4999.00
RKB = 17' @ 5016.00usft (D Rig)	
Plan: Permit Rev-1 (HILGERS 24N-34HZ/Plan A)	
Created By: Clint Eshelman	Date: 9/8/2015
Reviewed: _____	Date: _____

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-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
From:	Lat/Long	Easting:	1,645,309.73 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40.206606
		Longitude:	-104.982475
		Grid Convergence:	0.01 °

Well HILGERS 24N-34HZ			
Well Position	+N-S	0.00 usft	Northing: 14,601,968.90 usft
	+E-W	44.95 usft	Easting: 1,645,354.68 usft
Position Uncertainty		3.28 usft	Wellhead Elevation: 0.00 usft
			Latitude: 40.206606
			Longitude: -104.982314
			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	179.84

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	
916.67	10.00	228.00	913.29	-38.83	-43.12	1.50	1.50	0.00	228.00	
3,716.67	10.00	228.00	3,670.75	-364.17	-404.45	0.00	0.00	0.00	0.00	
4,216.67	0.00	0.00	4,168.21	-393.29	-436.80	2.00	-2.00	0.00	180.00	
6,610.89	0.00	0.00	6,562.43	-393.29	-436.80	0.00	0.00	0.00	0.00	
7,602.70	89.26	179.84	7,199.00	-1,021.72	-435.00	9.00	9.00	18.13	179.84	
16,540.22	89.26	179.84	7,314.00	-9,958.47	-409.47	0.00	0.00	0.00	0.00	HILGERS 24N-34HZ_

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft										
300.00	0.75	228.00	300.00	-0.22	-0.24	0.22	1.50	1.50	0.00	0.00
316.00	0.99	228.00	316.00	-0.38	-0.42	0.38	1.50	1.50	0.00	0.00
Fox Hills										
400.00	2.25	228.00	399.96	-1.97	-2.19	1.96	1.50	1.50	0.00	0.00
500.00	3.75	228.00	499.82	-5.47	-6.08	5.46	1.50	1.50	0.00	0.00
600.00	5.25	228.00	599.51	-10.72	-11.91	10.69	1.50	1.50	0.00	0.00
700.00	6.75	228.00	698.96	-17.72	-19.68	17.66	1.50	1.50	0.00	0.00
800.00	8.25	228.00	798.10	-26.45	-29.38	26.37	1.50	1.50	0.00	0.00
900.00	9.75	228.00	896.87	-36.92	-41.00	36.80	1.50	1.50	0.00	0.00
916.67	10.00	228.00	913.29	-38.83	-43.13	38.71	1.50	1.50	0.00	0.00
End Nudge @ 916.67ft										
1,000.00	10.00	228.00	995.35	-48.51	-53.88	48.36	0.00	0.00	0.00	0.00
1,100.00	10.00	228.00	1,093.84	-60.13	-66.78	59.95	0.00	0.00	0.00	0.00
1,200.00	10.00	228.00	1,192.32	-71.75	-79.69	71.53	0.00	0.00	0.00	0.00
1,300.00	10.00	228.00	1,290.80	-83.37	-92.59	83.11	0.00	0.00	0.00	0.00
1,400.00	10.00	228.00	1,389.28	-94.99	-105.50	94.69	0.00	0.00	0.00	0.00
1,500.00	10.00	228.00	1,487.76	-106.61	-118.40	106.28	0.00	0.00	0.00	0.00
1,600.00	10.00	228.00	1,586.24	-118.23	-131.31	117.86	0.00	0.00	0.00	0.00
1,700.00	10.00	228.00	1,684.72	-129.85	-144.21	129.44	0.00	0.00	0.00	0.00
1,800.00	10.00	228.00	1,783.20	-141.47	-157.12	141.03	0.00	0.00	0.00	0.00
1,817.06	10.00	228.00	1,800.00	-143.45	-159.32	143.00	0.00	0.00	0.00	0.00
9 5/8"										
1,900.00	10.00	228.00	1,881.68	-153.09	-170.02	152.61	0.00	0.00	0.00	0.00
2,000.00	10.00	228.00	1,980.16	-164.71	-182.92	164.19	0.00	0.00	0.00	0.00
2,100.00	10.00	228.00	2,078.64	-176.33	-195.83	175.78	0.00	0.00	0.00	0.00
2,200.00	10.00	228.00	2,177.12	-187.94	-208.73	187.36	0.00	0.00	0.00	0.00
2,300.00	10.00	228.00	2,275.60	-199.56	-221.64	198.94	0.00	0.00	0.00	0.00
2,400.00	10.00	228.00	2,374.09	-211.18	-234.54	210.53	0.00	0.00	0.00	0.00
2,500.00	10.00	228.00	2,472.57	-222.80	-247.45	222.11	0.00	0.00	0.00	0.00
2,600.00	10.00	228.00	2,571.05	-234.42	-260.35	233.69	0.00	0.00	0.00	0.00
2,700.00	10.00	228.00	2,669.53	-246.04	-273.26	245.28	0.00	0.00	0.00	0.00
2,800.00	10.00	228.00	2,768.01	-257.66	-286.16	256.86	0.00	0.00	0.00	0.00
2,900.00	10.00	228.00	2,866.49	-269.28	-299.07	268.44	0.00	0.00	0.00	0.00
3,000.00	10.00	228.00	2,964.97	-280.90	-311.97	280.03	0.00	0.00	0.00	0.00
3,100.00	10.00	228.00	3,063.45	-292.52	-324.87	291.61	0.00	0.00	0.00	0.00
3,200.00	10.00	228.00	3,161.93	-304.14	-337.78	303.19	0.00	0.00	0.00	0.00
3,300.00	10.00	228.00	3,260.41	-315.76	-350.68	314.78	0.00	0.00	0.00	0.00
3,400.00	10.00	228.00	3,358.89	-327.38	-363.59	326.36	0.00	0.00	0.00	0.00
3,500.00	10.00	228.00	3,457.37	-339.00	-376.49	337.94	0.00	0.00	0.00	0.00
3,600.00	10.00	228.00	3,555.85	-350.62	-389.40	349.53	0.00	0.00	0.00	0.00
3,700.00	10.00	228.00	3,654.34	-362.23	-402.30	361.11	0.00	0.00	0.00	0.00
3,716.67	10.00	228.00	3,670.75	-364.17	-404.45	363.04	0.00	0.00	0.00	0.00
Begin Drop @ 3716.67ft										
3,800.00	8.33	228.00	3,753.02	-373.05	-414.32	371.90	2.00	-2.00	0.00	0.00
3,900.00	6.33	228.00	3,852.19	-381.59	-423.80	380.41	2.00	-2.00	0.00	0.00
4,000.00	4.33	228.00	3,951.75	-387.81	-430.71	386.61	2.00	-2.00	0.00	0.00
4,100.00	2.33	228.00	4,051.58	-391.70	-435.03	390.49	2.00	-2.00	0.00	0.00
4,200.00	0.33	228.00	4,151.55	-393.26	-436.76	392.04	2.00	-2.00	0.00	0.00
4,204.45	0.24	228.00	4,156.00	-393.28	-436.78	392.05	2.00	-2.00	0.00	0.00

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Planning Report

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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 24N-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)	
Sussex										
4,216.67	0.00	0.00	4,168.22	-393.29	-436.80	392.07	2.00	-2.00	0.00	
End Drop @ 4216.67ft										
4,300.00	0.00	0.00	4,251.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,351.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,451.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,551.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,651.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,751.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,851.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,951.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,051.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,151.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,251.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,351.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,451.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,551.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,651.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,751.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,851.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,951.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,051.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,151.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,251.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,351.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,451.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,551.55	-393.29	-436.80	392.07	0.00	0.00	0.00	
6,610.89	0.00	0.00	6,562.44	-393.29	-436.80	392.07	0.00	0.00	0.00	
KOP @ 6610.89ft										
6,700.00	8.02	179.84	6,651.26	-399.52	-436.78	398.30	9.00	9.00	0.00	
6,800.00	17.02	179.84	6,748.78	-421.18	-436.72	419.95	9.00	9.00	0.00	
6,900.00	26.02	179.84	6,841.71	-457.82	-436.61	456.60	9.00	9.00	0.00	
7,000.00	35.02	179.84	6,927.77	-508.55	-436.47	507.33	9.00	9.00	0.00	
7,085.79	42.74	179.84	6,994.50	-562.36	-436.31	561.14	9.00	9.00	0.00	
Sharon Springs										
7,100.00	44.02	179.84	7,004.83	-572.12	-436.29	570.90	9.00	9.00	0.00	
7,197.52	52.80	179.84	7,069.50	-644.98	-436.08	643.76	9.00	9.00	0.00	
Niobrara Top										
7,200.00	53.02	179.84	7,071.00	-646.96	-436.07	645.74	9.00	9.00	0.00	
DLS = 9°/100'										
7,300.00	62.02	179.84	7,124.64	-731.24	-435.83	730.02	9.00	9.00	0.00	
7,307.67	62.71	179.84	7,128.20	-738.03	-435.81	736.81	9.00	9.00	0.00	
Niobrara B Bench										
7,400.00	71.02	179.84	7,164.44	-822.86	-435.57	821.64	9.00	9.00	0.00	
7,466.72	77.03	179.84	7,182.80	-886.97	-435.39	885.75	9.00	9.00	0.00	
Niobrara C Bench										
7,500.00	80.02	179.84	7,189.42	-919.58	-435.29	918.36	9.00	9.00	0.00	
7,600.00	89.02	179.84	7,198.96	-1,019.02	-435.01	1,017.81	9.00	9.00	0.00	
7,602.70	89.26	179.84	7,199.00	-1,021.72	-435.00	1,020.51	8.98	8.98	0.00	
End Build @ 7602.70ft - 7"										
7,700.00	89.26	179.84	7,200.25	-1,119.02	-434.72	1,117.80	0.00	0.00	0.00	
7,800.00	89.26	179.84	7,201.54	-1,219.01	-434.44	1,217.79	0.00	0.00	0.00	
7,900.00	89.26	179.84	7,202.83	-1,319.00	-434.15	1,317.78	0.00	0.00	0.00	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-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)	
8,000.00	89.26	179.84	7,204.11	-1,418.99	-433.87	1,417.77	0.00	0.00	0.00	
8,100.00	89.26	179.84	7,205.40	-1,518.98	-433.58	1,517.76	0.00	0.00	0.00	
8,200.00	89.26	179.84	7,206.69	-1,618.97	-433.29	1,617.76	0.00	0.00	0.00	
8,300.00	89.26	179.84	7,207.97	-1,718.96	-433.01	1,717.75	0.00	0.00	0.00	
8,400.00	89.26	179.84	7,209.26	-1,818.95	-432.72	1,817.74	0.00	0.00	0.00	
8,500.00	89.26	179.84	7,210.55	-1,918.95	-432.44	1,917.73	0.00	0.00	0.00	
8,600.00	89.26	179.84	7,211.83	-2,018.94	-432.15	2,017.72	0.00	0.00	0.00	
8,700.00	89.26	179.84	7,213.12	-2,118.93	-431.87	2,117.71	0.00	0.00	0.00	
8,800.00	89.26	179.84	7,214.41	-2,218.92	-431.58	2,217.71	0.00	0.00	0.00	
8,900.00	89.26	179.84	7,215.69	-2,318.91	-431.30	2,317.70	0.00	0.00	0.00	
9,000.00	89.26	179.84	7,216.98	-2,418.90	-431.01	2,417.69	0.00	0.00	0.00	
9,100.00	89.26	179.84	7,218.27	-2,518.89	-430.72	2,517.68	0.00	0.00	0.00	
9,200.00	89.26	179.84	7,219.55	-2,618.89	-430.44	2,617.67	0.00	0.00	0.00	
9,300.00	89.26	179.84	7,220.84	-2,718.88	-430.15	2,717.66	0.00	0.00	0.00	
9,400.00	89.26	179.84	7,222.13	-2,818.87	-429.87	2,817.66	0.00	0.00	0.00	
9,500.00	89.26	179.84	7,223.41	-2,918.86	-429.58	2,917.65	0.00	0.00	0.00	
9,600.00	89.26	179.84	7,224.70	-3,018.85	-429.30	3,017.64	0.00	0.00	0.00	
9,700.00	89.26	179.84	7,225.99	-3,118.84	-429.01	3,117.63	0.00	0.00	0.00	
9,800.00	89.26	179.84	7,227.27	-3,218.83	-428.72	3,217.62	0.00	0.00	0.00	
9,900.00	89.26	179.84	7,228.56	-3,318.82	-428.44	3,317.62	0.00	0.00	0.00	
10,000.00	89.26	179.84	7,229.85	-3,418.82	-428.15	3,417.61	0.00	0.00	0.00	
10,100.00	89.26	179.84	7,231.13	-3,518.81	-427.87	3,517.60	0.00	0.00	0.00	
10,200.00	89.26	179.84	7,232.42	-3,618.80	-427.58	3,617.59	0.00	0.00	0.00	
10,300.00	89.26	179.84	7,233.71	-3,718.79	-427.30	3,717.58	0.00	0.00	0.00	
10,400.00	89.26	179.84	7,234.99	-3,818.78	-427.01	3,817.57	0.00	0.00	0.00	
10,500.00	89.26	179.84	7,236.28	-3,918.77	-426.72	3,917.57	0.00	0.00	0.00	
10,600.00	89.26	179.84	7,237.57	-4,018.76	-426.44	4,017.56	0.00	0.00	0.00	
10,700.00	89.26	179.84	7,238.85	-4,118.76	-426.15	4,117.55	0.00	0.00	0.00	
10,800.00	89.26	179.84	7,240.14	-4,218.75	-425.87	4,217.54	0.00	0.00	0.00	
10,900.00	89.26	179.84	7,241.43	-4,318.74	-425.58	4,317.53	0.00	0.00	0.00	
11,000.00	89.26	179.84	7,242.71	-4,418.73	-425.30	4,417.52	0.00	0.00	0.00	
11,100.00	89.26	179.84	7,244.00	-4,518.72	-425.01	4,517.52	0.00	0.00	0.00	
11,200.00	89.26	179.84	7,245.29	-4,618.71	-424.72	4,617.51	0.00	0.00	0.00	
11,300.00	89.26	179.84	7,246.57	-4,718.70	-424.44	4,717.50	0.00	0.00	0.00	
11,400.00	89.26	179.84	7,247.86	-4,818.69	-424.15	4,817.49	0.00	0.00	0.00	
11,500.00	89.26	179.84	7,249.15	-4,918.69	-423.87	4,917.48	0.00	0.00	0.00	
11,600.00	89.26	179.84	7,250.43	-5,018.68	-423.58	5,017.47	0.00	0.00	0.00	
11,700.00	89.26	179.84	7,251.72	-5,118.67	-423.30	5,117.47	0.00	0.00	0.00	
11,800.00	89.26	179.84	7,253.01	-5,218.66	-423.01	5,217.46	0.00	0.00	0.00	
11,900.00	89.26	179.84	7,254.29	-5,318.65	-422.73	5,317.45	0.00	0.00	0.00	
12,000.00	89.26	179.84	7,255.58	-5,418.64	-422.44	5,417.44	0.00	0.00	0.00	
12,100.00	89.26	179.84	7,256.87	-5,518.63	-422.15	5,517.43	0.00	0.00	0.00	
12,200.00	89.26	179.84	7,258.15	-5,618.62	-421.87	5,617.42	0.00	0.00	0.00	
12,300.00	89.26	179.84	7,259.44	-5,718.62	-421.58	5,717.42	0.00	0.00	0.00	
12,400.00	89.26	179.84	7,260.73	-5,818.61	-421.30	5,817.41	0.00	0.00	0.00	
12,500.00	89.26	179.84	7,262.01	-5,918.60	-421.01	5,917.40	0.00	0.00	0.00	
12,600.00	89.26	179.84	7,263.30	-6,018.59	-420.73	6,017.39	0.00	0.00	0.00	
12,700.00	89.26	179.84	7,264.59	-6,118.58	-420.44	6,117.38	0.00	0.00	0.00	
12,800.00	89.26	179.84	7,265.87	-6,218.57	-420.15	6,217.38	0.00	0.00	0.00	
12,900.00	89.26	179.84	7,267.16	-6,318.56	-419.87	6,317.37	0.00	0.00	0.00	
13,000.00	89.26	179.84	7,268.45	-6,418.56	-419.58	6,417.36	0.00	0.00	0.00	
13,100.00	89.26	179.84	7,269.74	-6,518.55	-419.30	6,517.35	0.00	0.00	0.00	
13,200.00	89.26	179.84	7,271.02	-6,618.54	-419.01	6,617.34	0.00	0.00	0.00	
13,300.00	89.26	179.84	7,272.31	-6,718.53	-418.73	6,717.33	0.00	0.00	0.00	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-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)	
13,400.00	89.26	179.84	7,273.60	-6,818.52	-418.44	6,817.33	0.00	0.00	0.00	
13,500.00	89.26	179.84	7,274.88	-6,918.51	-418.15	6,917.32	0.00	0.00	0.00	
13,600.00	89.26	179.84	7,276.17	-7,018.50	-417.87	7,017.31	0.00	0.00	0.00	
13,700.00	89.26	179.84	7,277.46	-7,118.49	-417.58	7,117.30	0.00	0.00	0.00	
13,800.00	89.26	179.84	7,278.74	-7,218.49	-417.30	7,217.29	0.00	0.00	0.00	
13,900.00	89.26	179.84	7,280.03	-7,318.48	-417.01	7,317.28	0.00	0.00	0.00	
14,000.00	89.26	179.84	7,281.32	-7,418.47	-416.73	7,417.28	0.00	0.00	0.00	
14,100.00	89.26	179.84	7,282.60	-7,518.46	-416.44	7,517.27	0.00	0.00	0.00	
14,200.00	89.26	179.84	7,283.89	-7,618.45	-416.16	7,617.26	0.00	0.00	0.00	
14,300.00	89.26	179.84	7,285.18	-7,718.44	-415.87	7,717.25	0.00	0.00	0.00	
14,400.00	89.26	179.84	7,286.46	-7,818.43	-415.58	7,817.24	0.00	0.00	0.00	
14,500.00	89.26	179.84	7,287.75	-7,918.43	-415.30	7,917.23	0.00	0.00	0.00	
14,600.00	89.26	179.84	7,289.04	-8,018.42	-415.01	8,017.23	0.00	0.00	0.00	
14,700.00	89.26	179.84	7,290.32	-8,118.41	-414.73	8,117.22	0.00	0.00	0.00	
14,800.00	89.26	179.84	7,291.61	-8,218.40	-414.44	8,217.21	0.00	0.00	0.00	
14,900.00	89.26	179.84	7,292.90	-8,318.39	-414.16	8,317.20	0.00	0.00	0.00	
15,000.00	89.26	179.84	7,294.18	-8,418.38	-413.87	8,417.19	0.00	0.00	0.00	
15,100.00	89.26	179.84	7,295.47	-8,518.37	-413.58	8,517.18	0.00	0.00	0.00	
15,200.00	89.26	179.84	7,296.76	-8,618.36	-413.30	8,617.18	0.00	0.00	0.00	
15,300.00	89.26	179.84	7,298.04	-8,718.36	-413.01	8,717.17	0.00	0.00	0.00	
15,400.00	89.26	179.84	7,299.33	-8,818.35	-412.73	8,817.16	0.00	0.00	0.00	
15,500.00	89.26	179.84	7,300.62	-8,918.34	-412.44	8,917.15	0.00	0.00	0.00	
15,600.00	89.26	179.84	7,301.90	-9,018.33	-412.16	9,017.14	0.00	0.00	0.00	
15,700.00	89.26	179.84	7,303.19	-9,118.32	-411.87	9,117.14	0.00	0.00	0.00	
15,800.00	89.26	179.84	7,304.48	-9,218.31	-411.58	9,217.13	0.00	0.00	0.00	
15,900.00	89.26	179.84	7,305.76	-9,318.30	-411.30	9,317.12	0.00	0.00	0.00	
16,000.00	89.26	179.84	7,307.05	-9,418.29	-411.01	9,417.11	0.00	0.00	0.00	
16,100.00	89.26	179.84	7,308.34	-9,518.29	-410.73	9,517.10	0.00	0.00	0.00	
16,200.00	89.26	179.84	7,309.62	-9,618.28	-410.44	9,617.09	0.00	0.00	0.00	
16,300.00	89.26	179.84	7,310.91	-9,718.27	-410.16	9,717.09	0.00	0.00	0.00	
16,400.00	89.26	179.84	7,312.20	-9,818.26	-409.87	9,817.08	0.00	0.00	0.00	
16,500.00	89.26	179.84	7,313.48	-9,918.25	-409.58	9,917.07	0.00	0.00	0.00	
16,540.22	89.26	179.84	7,314.00	-9,958.47	-409.47	9,957.29	0.00	0.00	0.00	
TD Well @ 16540.23ft										

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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 24N-34HZ_St	0.00	0.00	0.00	0.00	0.00	14,601,968.90	1,645,354.68	40.206606	-104.982314	
- plan hits target center										
- Point										
3N-R68W-Sec. 27_Secti	0.00	0.00	0.00	0.00	-44.95	14,601,968.89	1,645,309.73	40.206606	-104.982475	
- plan misses target center by 44.95usft 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 24N-34HZ_4E	0.00	0.00	0.00	0.00	0.00	14,601,968.90	1,645,354.68	40.206606	-104.982314	
- plan hits target center										
- Polygon										
Point 1			0.00	-400.41	-532.56	14,601,568.39	1,644,822.20			
Point 2			0.00	-401.71	-498.18	14,601,567.09	1,644,856.58			
Point 3			0.00	-405.62	-463.25	14,601,563.19	1,644,891.52			
Point 4			0.00	-412.13	-428.71	14,601,556.69	1,644,926.06			
Point 5			0.00	-421.21	-394.75	14,601,547.61	1,644,960.02			
Point 6			0.00	-432.80	-361.57	14,601,536.03	1,644,993.20			
Point 7			0.00	-446.83	-329.35	14,601,522.01	1,645,025.42			
Point 8			0.00	-463.24	-298.27	14,601,505.60	1,645,056.51			
Point 9			0.00	-481.92	-268.49	14,601,486.93	1,645,086.29			
Point 10			0.00	-502.78	-240.21	14,601,466.07	1,645,114.57			
Point 11			0.00	-525.68	-213.55	14,601,443.18	1,645,141.24			
Point 12			0.00	-550.53	-188.69	14,601,418.33	1,645,166.10			
Point 13			0.00	-577.15	-165.74	14,601,391.72	1,645,189.06			
Point 14			0.00	-605.42	-144.85	14,601,363.45	1,645,209.96			
Point 15			0.00	-635.17	-126.13	14,601,333.71	1,645,228.68			
Point 16			0.00	-666.23	-109.69	14,601,302.65	1,645,245.13			
Point 17			0.00	-698.44	-95.62	14,601,270.44	1,645,259.20			
Point 18			0.00	-731.61	-83.99	14,601,237.28	1,645,270.84			
Point 19			0.00	-765.55	-74.87	14,601,203.34	1,645,279.97			
Point 20			0.00	-800.08	-68.32	14,601,168.81	1,645,286.52			
Point 21			0.00	-835.00	-64.36	14,601,133.89	1,645,290.49			
Point 22			0.00	-870.12	-63.03	14,601,098.77	1,645,291.83			
Point 23			0.00	-905.25	-64.32	14,601,063.64	1,645,290.55			
Point 24			0.00	-940.18	-68.24	14,601,028.71	1,645,286.63			
Point 25			0.00	-974.71	-74.75	14,600,994.18	1,645,280.13			
Point 26			0.00	-1,008.67	-83.83	14,600,960.22	1,645,271.06			
Point 27			0.00	-1,041.86	-95.42	14,600,927.02	1,645,259.47			
Point 28			0.00	-1,074.07	-109.45	14,600,894.81	1,645,245.45			
Point 29			0.00	-1,105.16	-125.86	14,600,863.72	1,645,229.04			
Point 30			0.00	-1,134.93	-144.53	14,600,833.94	1,645,210.38			
Point 31			0.00	-1,163.22	-165.39	14,600,805.65	1,645,189.53			
Point 32			0.00	-1,189.88	-188.31	14,600,778.98	1,645,166.61			
Point 33			0.00	-1,214.74	-213.14	14,600,754.12	1,645,141.79			
Point 34			0.00	-1,237.69	-239.76	14,600,731.16	1,645,115.17			
Point 35			0.00	-1,258.57	-268.03	14,600,710.28	1,645,086.91			
Point 36			0.00	-1,277.29	-297.78	14,600,691.55	1,645,057.16			
Point 37			0.00	-1,293.73	-328.85	14,600,675.11	1,645,026.09			
Point 38			0.00	-1,307.80	-361.05	14,600,661.03	1,644,993.90			
Point 39			0.00	-1,319.44	-394.22	14,600,649.38	1,644,960.73			
Point 40			0.00	-1,328.55	-428.16	14,600,640.27	1,644,926.79			
Point 41			0.00	-1,335.10	-462.69	14,600,633.71	1,644,892.26			
Point 42			0.00	-1,339.07	-497.61	14,600,629.73	1,644,857.34			

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 43	0.00	-1,340.41	-533.12	14,600,628.39	1,644,821.83
Point 44	0.00	-1,339.10	-567.86	14,600,629.69	1,644,787.09
Point 45	0.00	-1,335.20	-602.79	14,600,633.58	1,644,752.16
Point 46	0.00	-1,328.68	-637.33	14,600,640.10	1,644,717.62
Point 47	0.00	-1,319.60	-671.29	14,600,649.17	1,644,683.66
Point 48	0.00	-1,308.02	-704.47	14,600,660.74	1,644,650.48
Point 49	0.00	-1,293.98	-736.70	14,600,674.78	1,644,618.24
Point 50	0.00	-1,277.57	-767.77	14,600,691.18	1,644,587.17
Point 51	0.00	-1,258.89	-797.55	14,600,709.85	1,644,557.39
Point 52	0.00	-1,238.03	-825.83	14,600,730.71	1,644,529.10
Point 53	0.00	-1,215.13	-852.49	14,600,753.60	1,644,502.44
Point 54	0.00	-1,190.29	-877.37	14,600,778.44	1,644,477.55
Point 55	0.00	-1,163.66	-900.30	14,600,805.06	1,644,454.62
Point 56	0.00	-1,135.39	-921.19	14,600,833.33	1,644,433.72
Point 57	0.00	-1,105.65	-939.91	14,600,863.06	1,644,414.99
Point 58	0.00	-1,074.59	-956.35	14,600,894.12	1,644,398.55
Point 59	0.00	-1,042.37	-970.43	14,600,926.34	1,644,384.46
Point 60	0.00	-1,009.21	-982.05	14,600,959.50	1,644,372.84
Point 61	0.00	-975.26	-991.17	14,600,993.44	1,644,363.71
Point 62	0.00	-940.73	-997.73	14,601,027.97	1,644,357.14
Point 63	0.00	-905.81	-1,001.68	14,601,062.89	1,644,353.19
Point 64	0.00	-870.69	-1,003.01	14,601,098.01	1,644,351.85
Point 65	0.00	-835.57	-1,001.72	14,601,133.13	1,644,353.13
Point 66	0.00	-800.64	-997.81	14,601,168.06	1,644,357.03
Point 67	0.00	-766.10	-991.29	14,601,202.60	1,644,363.55
Point 68	0.00	-732.14	-982.21	14,601,236.57	1,644,372.62
Point 69	0.00	-698.96	-970.63	14,601,269.75	1,644,384.19
Point 70	0.00	-666.74	-956.59	14,601,301.97	1,644,398.23
Point 71	0.00	-635.65	-940.18	14,601,333.06	1,644,414.63
Point 72	0.00	-605.88	-921.51	14,601,362.84	1,644,433.30
Point 73	0.00	-577.59	-900.65	14,601,391.13	1,644,454.15
Point 74	0.00	-550.93	-877.74	14,601,417.80	1,644,477.05
Point 75	0.00	-526.07	-852.90	14,601,442.66	1,644,501.89
Point 76	0.00	-503.12	-826.28	14,601,465.62	1,644,528.50
Point 77	0.00	-482.24	-798.01	14,601,486.50	1,644,556.77
Point 78	0.00	-463.52	-768.26	14,601,505.23	1,644,586.52
Point 79	0.00	-447.08	-737.20	14,601,521.68	1,644,617.57
Point 80	0.00	-433.01	-704.99	14,601,535.75	1,644,649.78
Point 81	0.00	-421.37	-671.82	14,601,547.40	1,644,682.95
Point 82	0.00	-412.26	-637.88	14,601,556.52	1,644,716.89
Point 83	0.00	-405.71	-603.35	14,601,563.07	1,644,751.42
Point 84	0.00	-401.74	-568.43	14,601,567.05	1,644,786.33
Point 85	0.00	-400.41	-533.30	14,601,568.39	1,644,821.46
Point 86	0.00	-420.40	-532.56	14,601,548.40	1,644,822.21
Point 87	0.00	-421.62	-566.19	14,601,547.17	1,644,788.58
Point 88	0.00	-425.36	-599.63	14,601,543.42	1,644,755.14
Point 89	0.00	-431.58	-632.70	14,601,537.20	1,644,722.07
Point 90	0.00	-440.25	-665.22	14,601,528.52	1,644,689.55
Point 91	0.00	-451.34	-697.00	14,601,517.42	1,644,657.77
Point 92	0.00	-464.76	-727.85	14,601,504.00	1,644,626.93
Point 93	0.00	-480.45	-757.62	14,601,488.30	1,644,597.16
Point 94	0.00	-498.33	-786.14	14,601,470.42	1,644,568.64
Point 95	0.00	-518.28	-813.23	14,601,450.46	1,644,541.56
Point 96	0.00	-540.21	-838.77	14,601,428.53	1,644,516.02
Point 97	0.00	-563.98	-862.58	14,601,404.75	1,644,492.22
Point 98	0.00	-589.47	-884.57	14,601,379.26	1,644,470.23
Point 99	0.00	-616.53	-904.57	14,601,352.19	1,644,450.24
Point 100	0.00	-645.00	-922.51	14,601,323.72	1,644,432.30
Point 101	0.00	-674.74	-938.26	14,601,293.98	1,644,416.56
Point 102	0.00	-705.57	-951.75	14,601,263.14	1,644,403.08
Point 103	0.00	-737.32	-962.89	14,601,231.39	1,644,391.94
Point 104	0.00	-769.82	-971.64	14,601,198.89	1,644,383.20
Point 105	0.00	-802.88	-977.94	14,601,165.83	1,644,376.90
Point 106	0.00	-836.31	-981.73	14,601,132.40	1,644,373.12

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 107	0.00	-869.94	-983.03	14,601,098.77	1,644,371.83
Point 108	0.00	-903.57	-981.81	14,601,065.14	1,644,373.05
Point 109	0.00	-937.02	-978.07	14,601,031.69	1,644,376.80
Point 110	0.00	-970.09	-971.85	14,600,998.62	1,644,383.03
Point 111	0.00	-1,002.60	-963.18	14,600,966.11	1,644,391.70
Point 112	0.00	-1,034.38	-952.09	14,600,934.33	1,644,402.80
Point 113	0.00	-1,065.24	-938.66	14,600,903.48	1,644,416.24
Point 114	0.00	-1,095.01	-922.97	14,600,873.71	1,644,431.93
Point 115	0.00	-1,123.52	-905.09	14,600,845.20	1,644,449.82
Point 116	0.00	-1,150.62	-885.14	14,600,818.11	1,644,469.77
Point 117	0.00	-1,176.14	-863.21	14,600,792.59	1,644,491.71
Point 118	0.00	-1,199.97	-839.45	14,600,768.76	1,644,515.47
Point 119	0.00	-1,221.94	-813.96	14,600,746.80	1,644,540.97
Point 120	0.00	-1,241.96	-786.91	14,600,726.79	1,644,568.02
Point 121	0.00	-1,259.89	-758.43	14,600,708.86	1,644,596.51
Point 122	0.00	-1,275.65	-728.69	14,600,693.11	1,644,626.25
Point 123	0.00	-1,289.14	-697.85	14,600,679.62	1,644,657.09
Point 124	0.00	-1,300.28	-666.11	14,600,668.49	1,644,688.83
Point 125	0.00	-1,309.03	-633.61	14,600,659.75	1,644,721.34
Point 126	0.00	-1,315.32	-600.55	14,600,653.46	1,644,754.40
Point 127	0.00	-1,319.12	-567.11	14,600,649.67	1,644,787.84
Point 128	0.00	-1,320.40	-533.11	14,600,648.40	1,644,821.84
Point 129	0.00	-1,319.19	-499.85	14,600,649.61	1,644,855.10
Point 130	0.00	-1,315.45	-466.41	14,600,653.36	1,644,888.54
Point 131	0.00	-1,309.23	-433.34	14,600,659.59	1,644,921.61
Point 132	0.00	-1,300.56	-400.83	14,600,668.26	1,644,954.11
Point 133	0.00	-1,289.47	-369.04	14,600,679.36	1,644,985.90
Point 134	0.00	-1,276.05	-338.19	14,600,692.78	1,645,016.75
Point 135	0.00	-1,260.35	-308.42	14,600,708.49	1,645,046.52
Point 136	0.00	-1,242.48	-279.91	14,600,726.37	1,645,075.02
Point 137	0.00	-1,222.53	-252.81	14,600,746.32	1,645,102.12
Point 138	0.00	-1,200.60	-227.28	14,600,768.26	1,645,127.64
Point 139	0.00	-1,176.83	-203.46	14,600,792.03	1,645,151.46
Point 140	0.00	-1,151.34	-181.48	14,600,817.53	1,645,173.43
Point 141	0.00	-1,124.28	-161.47	14,600,844.59	1,645,193.44
Point 142	0.00	-1,095.81	-143.54	14,600,873.06	1,645,211.36
Point 143	0.00	-1,066.07	-127.78	14,600,902.81	1,645,227.12
Point 144	0.00	-1,035.24	-114.29	14,600,933.64	1,645,240.60
Point 145	0.00	-1,003.50	-103.15	14,600,965.38	1,645,251.73
Point 146	0.00	-971.00	-94.40	14,600,997.88	1,645,260.48
Point 147	0.00	-937.94	-88.11	14,601,030.94	1,645,266.76
Point 148	0.00	-904.50	-84.31	14,601,064.39	1,645,270.55
Point 149	0.00	-870.87	-83.01	14,601,098.02	1,645,271.85
Point 150	0.00	-837.24	-84.23	14,601,131.65	1,645,270.62
Point 151	0.00	-803.80	-87.97	14,601,165.08	1,645,266.87
Point 152	0.00	-770.72	-94.19	14,601,198.16	1,645,260.65
Point 153	0.00	-738.21	-102.87	14,601,230.67	1,645,251.96
Point 154	0.00	-706.43	-113.95	14,601,262.45	1,645,240.88
Point 155	0.00	-675.57	-127.38	14,601,293.31	1,645,227.44
Point 156	0.00	-645.81	-143.08	14,601,323.06	1,645,211.73
Point 157	0.00	-617.29	-160.95	14,601,351.58	1,645,193.86
Point 158	0.00	-590.19	-180.91	14,601,378.68	1,645,173.89
Point 159	0.00	-564.67	-202.83	14,601,404.19	1,645,151.97
Point 160	0.00	-540.84	-226.60	14,601,428.02	1,645,128.19
Point 161	0.00	-518.87	-252.08	14,601,449.98	1,645,102.71
Point 162	0.00	-498.85	-279.14	14,601,470.00	1,645,075.64
Point 163	0.00	-480.92	-307.61	14,601,487.92	1,645,047.17
Point 164	0.00	-465.17	-337.35	14,601,503.67	1,645,017.43
Point 165	0.00	-451.67	-368.19	14,601,517.16	1,644,986.58
Point 166	0.00	-440.53	-399.94	14,601,528.29	1,644,954.83
Point 167	0.00	-431.78	-432.43	14,601,537.04	1,644,922.34
Point 168	0.00	-425.49	-465.49	14,601,543.32	1,644,889.28
Point 169	0.00	-421.70	-498.93	14,601,547.10	1,644,855.84
Point 170	0.00	-420.40	-533.30	14,601,548.40	1,644,821.47

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 171			0.00	-400.41	-532.56	14,601,568.39	1,644,822.20		
HILGERS 24N-34HZ_46	0.00	0.00	0.00	0.00	0.00	14,601,968.90	1,645,354.68	40.206606	-104.982314
- plan hits target center									
- Polygon									
Point 1		0.00	-9,709.53	-541.35	14,592,259.26	1,644,815.27			
Point 2		0.00	-9,710.83	-506.98	14,592,257.97	1,644,849.64			
Point 3		0.00	-9,714.74	-472.05	14,592,254.07	1,644,884.57			
Point 4		0.00	-9,721.25	-437.52	14,592,247.57	1,644,919.10			
Point 5		0.00	-9,730.33	-403.56	14,592,238.49	1,644,953.06			
Point 6		0.00	-9,741.91	-370.38	14,592,226.92	1,644,986.25			
Point 7		0.00	-9,755.95	-338.15	14,592,212.88	1,645,018.48			
Point 8		0.00	-9,772.35	-307.08	14,592,196.49	1,645,049.55			
Point 9		0.00	-9,791.04	-277.30	14,592,177.81	1,645,079.34			
Point 10		0.00	-9,811.90	-249.00	14,592,156.95	1,645,107.64			
Point 11		0.00	-9,834.80	-222.36	14,592,134.06	1,645,134.28			
Point 12		0.00	-9,859.65	-197.48	14,592,109.21	1,645,159.17			
Point 13		0.00	-9,886.27	-174.55	14,592,082.60	1,645,182.10			
Point 14		0.00	-9,914.54	-153.65	14,592,054.33	1,645,203.01			
Point 15		0.00	-9,944.29	-134.94	14,592,024.59	1,645,221.73			
Point 16		0.00	-9,975.35	-118.50	14,591,993.53	1,645,238.17			
Point 17		0.00	-10,007.56	-104.42	14,591,961.32	1,645,252.26			
Point 18		0.00	-10,040.73	-92.80	14,591,928.15	1,645,263.89			
Point 19		0.00	-10,074.67	-83.68	14,591,894.22	1,645,273.01			
Point 20		0.00	-10,109.20	-77.12	14,591,859.69	1,645,279.58			
Point 21		0.00	-10,144.12	-73.17	14,591,824.77	1,645,283.54			
Point 22		0.00	-10,179.24	-71.84	14,591,789.65	1,645,284.87			
Point 23		0.00	-10,214.37	-73.12	14,591,754.52	1,645,283.60			
Point 24		0.00	-10,249.29	-77.04	14,591,719.60	1,645,279.69			
Point 25		0.00	-10,283.83	-83.56	14,591,685.06	1,645,273.17			
Point 26		0.00	-10,317.79	-92.63	14,591,651.09	1,645,264.11			
Point 27		0.00	-10,350.98	-104.22	14,591,617.90	1,645,252.53			
Point 28		0.00	-10,383.19	-118.26	14,591,585.69	1,645,238.49			
Point 29		0.00	-10,414.28	-134.66	14,591,554.60	1,645,222.10			
Point 30		0.00	-10,444.05	-153.34	14,591,524.82	1,645,203.43			
Point 31		0.00	-10,472.34	-174.19	14,591,496.53	1,645,182.58			
Point 32		0.00	-10,499.00	-197.10	14,591,469.86	1,645,159.68			
Point 33		0.00	-10,523.86	-221.95	14,591,445.00	1,645,134.83			
Point 34		0.00	-10,546.81	-248.57	14,591,422.04	1,645,108.22			
Point 35		0.00	-10,567.69	-276.83	14,591,401.16	1,645,079.96			
Point 36		0.00	-10,586.41	-306.59	14,591,382.43	1,645,050.20			
Point 37		0.00	-10,602.85	-337.65	14,591,365.98	1,645,019.15			
Point 38		0.00	-10,616.92	-369.85	14,591,351.91	1,644,986.95			
Point 39		0.00	-10,628.56	-403.03	14,591,340.26	1,644,953.77			
Point 40		0.00	-10,637.67	-436.97	14,591,331.15	1,644,919.83			
Point 41		0.00	-10,644.22	-471.50	14,591,324.59	1,644,885.31			
Point 42		0.00	-10,648.19	-506.42	14,591,320.61	1,644,850.39			
Point 43		0.00	-10,649.53	-541.92	14,591,319.26	1,644,814.89			
Point 44		0.00	-10,648.22	-576.67	14,591,320.57	1,644,780.14			
Point 45		0.00	-10,644.31	-611.60	14,591,324.47	1,644,745.21			
Point 46		0.00	-10,637.80	-646.14	14,591,330.97	1,644,710.66			
Point 47		0.00	-10,628.72	-680.09	14,591,340.05	1,644,676.71			
Point 48		0.00	-10,617.13	-713.27	14,591,351.63	1,644,643.53			
Point 49		0.00	-10,603.10	-745.49	14,591,365.65	1,644,611.31			
Point 50		0.00	-10,586.69	-776.58	14,591,382.06	1,644,580.21			
Point 51		0.00	-10,568.01	-806.35	14,591,400.73	1,644,550.44			
Point 52		0.00	-10,547.15	-834.64	14,591,421.59	1,644,522.15			
Point 53		0.00	-10,524.24	-861.30	14,591,444.49	1,644,495.48			
Point 54		0.00	-10,499.41	-886.16	14,591,469.32	1,644,470.62			
Point 55		0.00	-10,472.77	-909.10	14,591,495.95	1,644,447.67			
Point 56		0.00	-10,444.51	-929.99	14,591,524.21	1,644,426.78			
Point 57		0.00	-10,414.77	-948.71	14,591,553.94	1,644,408.05			
Point 58		0.00	-10,383.69	-965.16	14,591,585.02	1,644,391.59			
Point 59		0.00	-10,351.49	-979.23	14,591,617.22	1,644,377.52			

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 60	0.00	-10,318.33	-990.85	14,591,650.37	1,644,365.89
Point 61	0.00	-10,284.38	-999.97	14,591,684.32	1,644,356.76
Point 62	0.00	-10,249.85	-1,006.53	14,591,718.85	1,644,350.20
Point 63	0.00	-10,214.92	-1,010.48	14,591,753.78	1,644,346.24
Point 64	0.00	-10,179.80	-1,011.82	14,591,788.90	1,644,344.89
Point 65	0.00	-10,144.68	-1,010.52	14,591,824.02	1,644,346.19
Point 66	0.00	-10,109.76	-1,006.61	14,591,858.94	1,644,350.09
Point 67	0.00	-10,075.22	-1,000.10	14,591,893.48	1,644,356.59
Point 68	0.00	-10,041.26	-991.02	14,591,927.44	1,644,365.67
Point 69	0.00	-10,008.08	-979.43	14,591,960.63	1,644,377.25
Point 70	0.00	-9,975.85	-965.40	14,591,992.86	1,644,391.27
Point 71	0.00	-9,944.77	-948.99	14,592,023.94	1,644,407.68
Point 72	0.00	-9,915.00	-930.31	14,592,053.72	1,644,426.35
Point 73	0.00	-9,886.70	-909.46	14,592,082.02	1,644,447.19
Point 74	0.00	-9,860.05	-886.54	14,592,108.68	1,644,470.11
Point 75	0.00	-9,835.18	-861.71	14,592,133.55	1,644,494.93
Point 76	0.00	-9,812.24	-835.08	14,592,156.50	1,644,521.56
Point 77	0.00	-9,791.36	-806.81	14,592,177.38	1,644,549.83
Point 78	0.00	-9,772.64	-777.07	14,592,196.11	1,644,579.56
Point 79	0.00	-9,756.20	-746.00	14,592,212.55	1,644,610.63
Point 80	0.00	-9,742.12	-713.79	14,592,226.64	1,644,642.84
Point 81	0.00	-9,730.49	-680.63	14,592,238.28	1,644,675.99
Point 82	0.00	-9,721.38	-646.69	14,592,247.39	1,644,709.93
Point 83	0.00	-9,714.82	-612.15	14,592,253.96	1,644,744.47
Point 84	0.00	-9,710.86	-577.22	14,592,257.93	1,644,779.40
Point 85	0.00	-9,709.53	-542.10	14,592,259.26	1,644,814.52
Point 86	0.00	-9,729.52	-541.36	14,592,239.27	1,644,815.26
Point 87	0.00	-9,730.74	-574.99	14,592,238.05	1,644,781.63
Point 88	0.00	-9,734.47	-608.44	14,592,234.31	1,644,748.18
Point 89	0.00	-9,740.70	-641.51	14,592,228.07	1,644,715.12
Point 90	0.00	-9,749.37	-674.02	14,592,219.40	1,644,682.61
Point 91	0.00	-9,760.46	-705.80	14,592,208.30	1,644,650.83
Point 92	0.00	-9,773.88	-736.66	14,592,194.88	1,644,619.97
Point 93	0.00	-9,789.57	-766.43	14,592,179.18	1,644,590.21
Point 94	0.00	-9,807.45	-794.94	14,592,161.29	1,644,561.70
Point 95	0.00	-9,827.40	-822.04	14,592,141.34	1,644,534.60
Point 96	0.00	-9,849.33	-847.57	14,592,119.40	1,644,509.08
Point 97	0.00	-9,873.10	-871.39	14,592,095.63	1,644,485.26
Point 98	0.00	-9,898.59	-893.36	14,592,070.13	1,644,463.30
Point 99	0.00	-9,925.64	-913.38	14,592,043.08	1,644,443.28
Point 100	0.00	-9,954.12	-931.31	14,592,014.60	1,644,425.36
Point 101	0.00	-9,983.86	-947.07	14,591,984.85	1,644,409.60
Point 102	0.00	-10,014.68	-960.55	14,591,954.03	1,644,396.13
Point 103	0.00	-10,046.44	-971.70	14,591,922.27	1,644,384.99
Point 104	0.00	-10,078.94	-980.45	14,591,889.77	1,644,376.24
Point 105	0.00	-10,112.00	-986.73	14,591,856.71	1,644,369.97
Point 106	0.00	-10,145.43	-990.54	14,591,823.27	1,644,366.17
Point 107	0.00	-10,179.06	-991.84	14,591,789.64	1,644,364.87
Point 108	0.00	-10,212.69	-990.60	14,591,756.01	1,644,366.12
Point 109	0.00	-10,246.14	-986.87	14,591,722.57	1,644,369.86
Point 110	0.00	-10,279.21	-980.66	14,591,689.50	1,644,376.07
Point 111	0.00	-10,311.72	-971.97	14,591,656.99	1,644,384.77
Point 112	0.00	-10,343.49	-960.89	14,591,625.22	1,644,395.86
Point 113	0.00	-10,374.36	-947.47	14,591,594.35	1,644,409.28
Point 114	0.00	-10,404.13	-931.77	14,591,564.59	1,644,424.99
Point 115	0.00	-10,432.63	-913.90	14,591,536.09	1,644,442.86
Point 116	0.00	-10,459.74	-893.94	14,591,508.98	1,644,462.83
Point 117	0.00	-10,485.26	-872.02	14,591,483.47	1,644,484.75
Point 118	0.00	-10,509.09	-848.24	14,591,459.64	1,644,508.54
Point 119	0.00	-10,531.06	-822.77	14,591,437.68	1,644,534.01
Point 120	0.00	-10,551.08	-795.71	14,591,417.66	1,644,561.08
Point 121	0.00	-10,569.01	-767.23	14,591,399.74	1,644,589.56
Point 122	0.00	-10,584.77	-737.50	14,591,383.99	1,644,619.29
Point 123	0.00	-10,598.26	-706.66	14,591,370.50	1,644,650.14

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 124	0.00	-10,609.40	-674.91	14,591,359.37	1,644,681.89				
Point 125	0.00	-10,618.15	-642.41	14,591,350.62	1,644,714.39				
Point 126	0.00	-10,624.43	-609.36	14,591,344.35	1,644,747.44				
Point 127	0.00	-10,628.24	-575.92	14,591,340.55	1,644,780.88				
Point 128	0.00	-10,629.52	-541.92	14,591,339.27	1,644,814.88				
Point 129	0.00	-10,628.30	-508.66	14,591,340.50	1,644,848.14				
Point 130	0.00	-10,624.57	-475.22	14,591,344.24	1,644,881.58				
Point 131	0.00	-10,618.35	-442.14	14,591,350.46	1,644,914.66				
Point 132	0.00	-10,609.67	-409.62	14,591,359.15	1,644,947.18				
Point 133	0.00	-10,598.59	-377.85	14,591,370.24	1,644,978.95				
Point 134	0.00	-10,585.17	-346.99	14,591,383.66	1,645,009.80				
Point 135	0.00	-10,569.47	-317.22	14,591,399.37	1,645,039.57				
Point 136	0.00	-10,551.60	-288.71	14,591,417.24	1,645,068.08				
Point 137	0.00	-10,531.64	-261.62	14,591,437.21	1,645,095.16				
Point 138	0.00	-10,509.72	-236.08	14,591,459.14	1,645,120.70				
Point 139	0.00	-10,485.94	-212.26	14,591,482.92	1,645,144.51				
Point 140	0.00	-10,460.46	-190.28	14,591,508.40	1,645,166.49				
Point 141	0.00	-10,433.40	-170.28	14,591,535.47	1,645,186.48				
Point 142	0.00	-10,404.93	-152.34	14,591,563.94	1,645,204.42				
Point 143	0.00	-10,375.19	-136.59	14,591,593.69	1,645,220.16				
Point 144	0.00	-10,344.36	-123.10	14,591,624.52	1,645,233.65				
Point 145	0.00	-10,312.60	-111.94	14,591,656.28	1,645,244.80				
Point 146	0.00	-10,280.12	-103.21	14,591,688.76	1,645,253.52				
Point 147	0.00	-10,247.06	-96.91	14,591,721.82	1,645,259.82				
Point 148	0.00	-10,213.62	-93.11	14,591,755.26	1,645,263.61				
Point 149	0.00	-10,179.99	-91.82	14,591,788.89	1,645,264.89				
Point 150	0.00	-10,146.36	-93.04	14,591,822.52	1,645,263.67				
Point 151	0.00	-10,112.92	-96.77	14,591,855.96	1,645,259.93				
Point 152	0.00	-10,079.84	-103.00	14,591,889.04	1,645,253.69				
Point 153	0.00	-10,047.32	-111.67	14,591,921.56	1,645,245.02				
Point 154	0.00	-10,015.55	-122.75	14,591,953.33	1,645,233.93				
Point 155	0.00	-9,984.69	-136.18	14,591,984.19	1,645,220.49				
Point 156	0.00	-9,954.93	-151.87	14,592,013.94	1,645,204.80				
Point 157	0.00	-9,926.41	-169.75	14,592,042.46	1,645,186.91				
Point 158	0.00	-9,899.31	-189.71	14,592,069.55	1,645,166.95				
Point 159	0.00	-9,873.78	-211.64	14,592,095.08	1,645,145.01				
Point 160	0.00	-9,849.96	-235.40	14,592,118.90	1,645,121.25				
Point 161	0.00	-9,827.98	-260.89	14,592,140.87	1,645,095.75				
Point 162	0.00	-9,807.97	-287.94	14,592,160.87	1,645,068.70				
Point 163	0.00	-9,790.04	-316.42	14,592,178.80	1,645,040.22				
Point 164	0.00	-9,774.29	-346.16	14,592,194.54	1,645,010.47				
Point 165	0.00	-9,760.79	-376.98	14,592,208.04	1,644,979.65				
Point 166	0.00	-9,749.64	-408.74	14,592,219.18	1,644,947.89				
Point 167	0.00	-9,740.90	-441.24	14,592,227.91	1,644,915.39				
Point 168	0.00	-9,734.61	-474.30	14,592,234.20	1,644,882.32				
Point 169	0.00	-9,730.80	-507.74	14,592,238.00	1,644,848.88				
Point 170	0.00	-9,729.52	-542.11	14,592,239.27	1,644,814.51				
Point 171	0.00	-9,709.53	-541.35	14,592,259.26	1,644,815.27				
3N-R68W-Sec. 34_Secti	0.00	0.00	0.00	0.00	-44.95	14,601,968.89	1,645,309.73	40.206606	-104.982475
- plan misses target center by 44.95usft 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				
HILGERS 24N-34HZ_Hc	0.00	0.00	0.00	0.00	0.00	14,601,968.90	1,645,354.68	40.206606	-104.982314
- plan hits target center									
- Polygon									
Point 1	0.00	4.01	-997.70	14,601,972.71	1,644,356.98				
Point 2	0.00	15.74	-77.74	14,601,984.63	1,645,276.94				
Point 3	0.00	-861.50	-73.06	14,601,107.39	1,645,281.80				
Point 4	0.00	-2,185.46	-81.33	14,599,783.43	1,645,273.79				
Point 5	0.00	-3,509.42	-89.71	14,598,459.46	1,645,265.67				

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-34HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 6	0.00	-4,837.19	-97.09	14,597,131.69	1,645,258.56				
Point 7	0.00	-6,164.95	-104.48	14,595,803.93	1,645,251.43				
Point 8	0.00	-7,500.70	-105.79	14,594,468.18	1,645,250.39				
Point 9	0.00	-8,836.42	-107.02	14,593,132.46	1,645,249.43				
Point 10	0.00	-10,177.18	-81.79	14,591,791.71	1,645,274.92				
Point 11	0.00	-11,057.97	-65.21	14,590,910.92	1,645,291.68				
Point 12	0.00	-11,054.65	-985.43	14,590,914.06	1,644,371.46				
Point 13	0.00	-10,181.87	-1,001.86	14,591,786.83	1,644,354.85				
Point 14	0.00	-8,837.96	-1,027.09	14,593,130.74	1,644,329.36				
Point 15	0.00	-7,505.80	-1,025.80	14,594,462.90	1,644,330.38				
Point 16	0.00	-6,173.69	-1,024.51	14,595,795.01	1,644,331.40				
Point 17	0.00	-4,846.25	-1,017.16	14,597,122.45	1,644,338.49				
Point 18	0.00	-3,518.81	-1,009.78	14,598,449.89	1,644,345.61				
Point 19	0.00	-2,199.07	-1,001.44	14,599,769.63	1,644,353.68				
Point 20	0.00	-879.32	-993.08	14,601,089.38	1,644,361.78				
Point 21	0.00	4.01	-997.70	14,601,972.71	1,644,356.98				
3N-R68W-Sec. 22_Secti	0.00	0.00	15.00	2,787.60	260.19	14,604,756.55	1,645,614.32	40.214261	-104.981382
- plan misses target center by 2799.71usft 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	14,601,066.48	1,640,868.98			
Point 8		15.00	-1,042.08	-4,750.66	14,603,713.53	1,640,863.87			
HILGERS 24N-34HZ_TC	0.00	0.00	7,314.00	-9,958.47	-409.47	14,592,010.35	1,644,947.20	40.179259	-104.983780
- plan hits target center									
- Point									

Casing Points						
	Measured Depth (usft)	Vertical Depth (usft)		Name	Casing Diameter (")	Hole Diameter (")
	1,817.06	1,800.00	9 5/8"		9-5/8	13-1/2
	7,602.70	7,199.00	7"		7	8-3/4

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	316.00	316.00	Fox Hills			
	4,204.45	4,156.00	Sussex			
	7,085.79	6,994.50	Sharon Springs			
	7,197.52	7,069.50	Niobrara Top			
	7,307.67	7,128.20	Niobrara B Bench			
	7,466.72	7,182.80	Niobrara C Bench			

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well HILGERS 24N-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 24N-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
916.67	913.29	-38.83	-43.13	End Nudge @ 916.67ft
3,716.67	3,670.75	-364.17	-404.45	Begin Drop @ 3716.67ft
4,216.67	4,168.22	-393.29	-436.80	End Drop @ 4216.67ft
6,610.89	6,562.44	-393.29	-436.80	KOP @ 6610.89ft
7,200.00	7,071.00	-646.96	-436.07	DLS = 9°/100'
7,602.70	7,199.00	-1,021.72	-435.00	End Build @ 7602.70ft
16,540.22	7,314.00	-9,958.47	-409.47	TD Well @ 16540.23ft