

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-65W-22 Powers 3-22 Pad
POWERS 34G-22HZ**

Plan A

Plan: Permit Rev-3

Standard Planning Report

27 July, 2015

Project: WELD-NAD83-UTMFT13N

Site: 2N-65W-22 Powers 3-22 Pad

Well: POWERS 34G-22HZ

Wellbore: Plan A

Design: Permit Rev-3

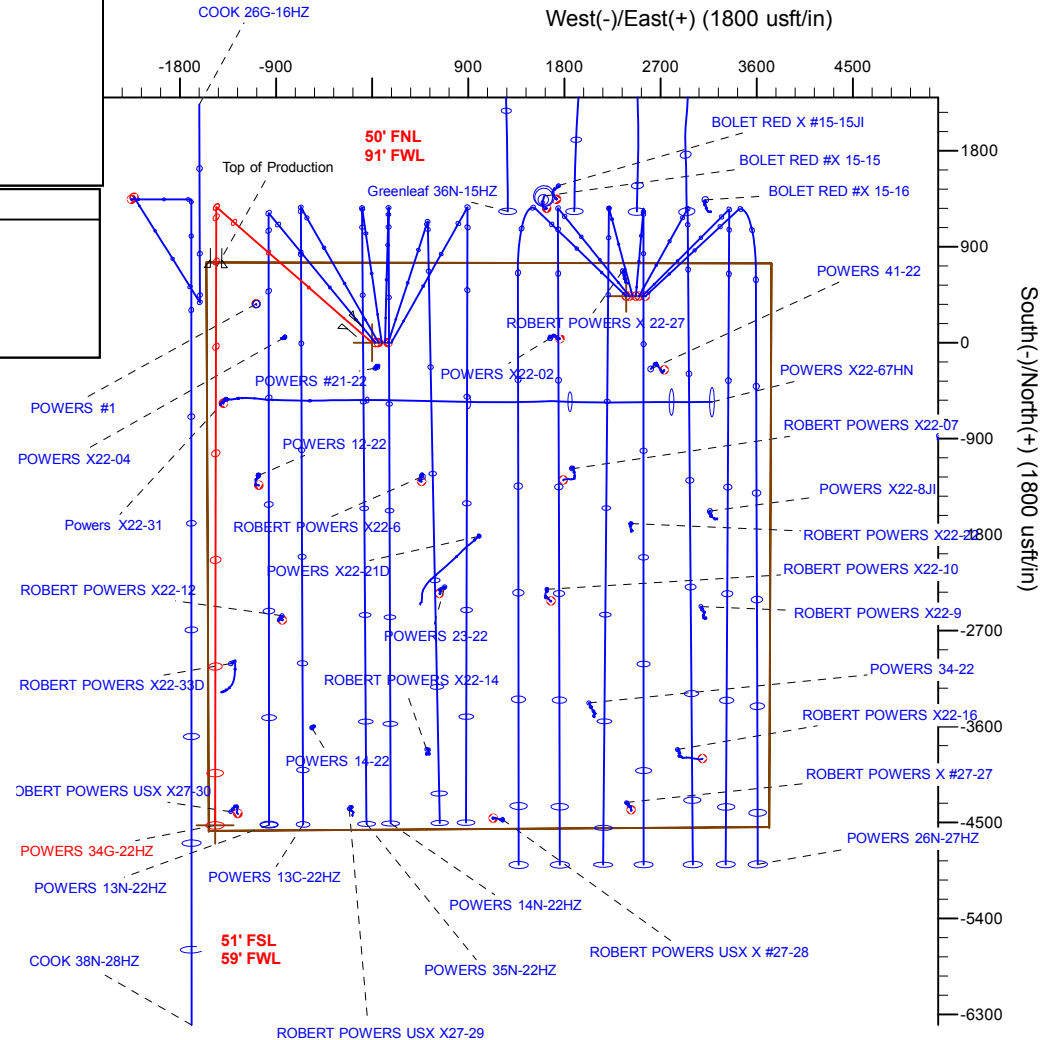
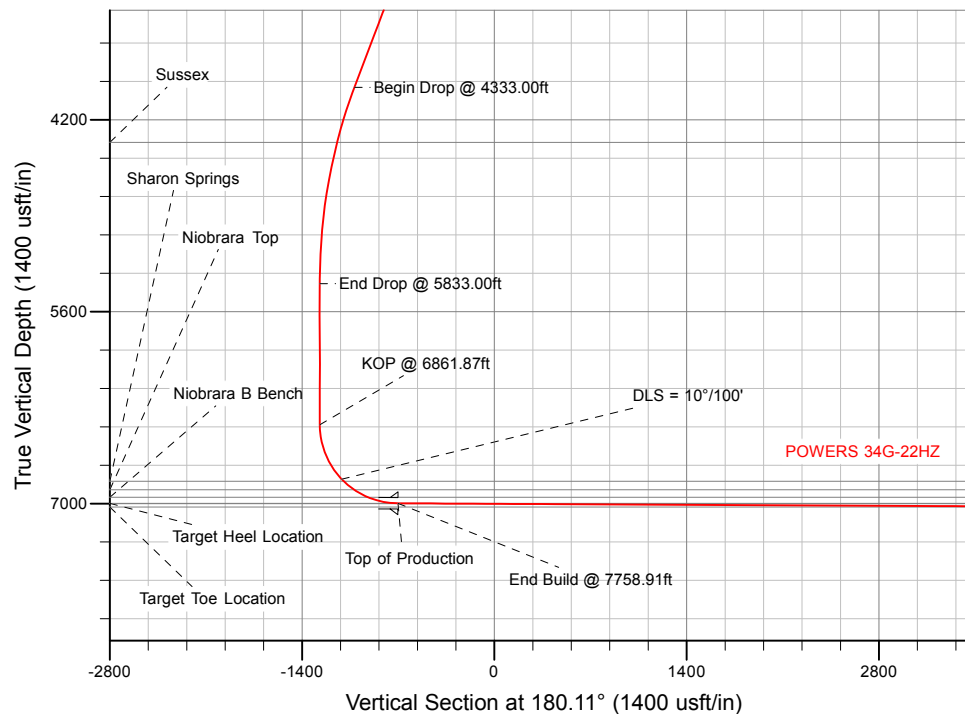
US ROCKIES WATTENBERG PLANNING

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	2250.00	30.00	311.10	2159.86	336.41	-385.63	1.50	311.10	-335.67	
4	4333.00	30.00	311.10	3963.79	1021.06	-1170.47	0.00	0.00	-1018.82	
5	5833.00	0.00	0.00	5396.18	1273.37	-1459.69	2.00	180.00	-1270.57	
6	6861.87	0.00	0.00	6425.05	1273.37	-1459.69	0.00	0.00	-1270.57	
7	7758.91	89.70	180.11	6998.00	703.37	-1460.76	10.00	180.11	-700.57	
8	12990.26	89.70	180.11	7025.00	-4527.90	-1470.55	0.00	0.00	4530.71	Powers 34G-22HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Powers 34G-22HZ_SHL	0.00	0.00	0.00	40.129333	-104.654019
Powers 34G-22HZ_BHL	7025.00	-4527.90	-1470.55	40.116899	-104.659279



WELL DETAILS: POWERS 34G-22HZ

Ground Level: 4883.00

RKB = 17' @ 4900.00usft (D Rig)

Plan: Permit Rev-3 (POWERS 34G-22HZ/Plan A)

Created By: Clint Eshelman

Date: 7/27/2015

Reviewed: _____

Date: _____

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 34G-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Site:	2N-65W-22 Powers 3-22 Pad	North Reference:	True
Well:	POWERS 34G-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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	2N-65W-22 Powers 3-22 Pad			
Site Position:		Northing:	14,574,017.80 usft	Latitude: 40.129333
From:	Lat/Long	Easting:	1,737,186.12 usft	Longitude: -104.653804
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.22 °

Well	POWERS 34G-22HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,574,017.56 usft	Latitude:	40.129333
	+E/-W	-60.10 usft	Easting:	1,737,126.03 usft	Longitude:	-104.654019
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,883.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/27/2015	8.23	66.71	52,567

Design	Permit Rev-3			
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	180.11

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	
2,250.00	30.00	311.10	2,159.86	336.41	-385.63	1.50	1.50	0.00	311.10	
4,333.00	30.00	311.10	3,963.79	1,021.07	-1,170.47	0.00	0.00	0.00	0.00	
5,833.00	0.00	0.00	5,396.18	1,273.37	-1,459.69	2.00	-2.00	3.26	180.00	
6,861.87	0.00	0.00	6,425.05	1,273.37	-1,459.69	0.00	0.00	0.00	0.00	
7,758.91	89.70	180.11	6,998.00	703.37	-1,460.76	10.00	10.00	-20.05	180.11	
12,990.26	89.70	180.11	7,025.00	-4,527.90	-1,470.55	0.00	0.00	0.00	0.00	Powers 34G-22HZ_BI

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 34G-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Site:	2N-65W-22 Powers 3-22 Pad	North Reference:	True
Well:	POWERS 34G-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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	
Powers 34G-22HZ_SHL - 2N-R65W-Sec. 22_Section Lines										
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	311.10	300.00	0.22	-0.25	-0.21	1.50	1.50	0.00	
400.00	2.25	311.10	399.96	1.94	-2.22	-1.93	1.50	1.50	0.00	
500.00	3.75	311.10	499.82	5.38	-6.16	-5.36	1.50	1.50	0.00	
600.00	5.25	311.10	599.51	10.53	-12.08	-10.51	1.50	1.50	0.00	
700.00	6.75	311.10	698.96	17.41	-19.95	-17.37	1.50	1.50	0.00	
800.00	8.25	311.10	798.10	25.99	-29.79	-25.93	1.50	1.50	0.00	
900.00	9.75	311.10	896.87	36.27	-41.58	-36.19	1.50	1.50	0.00	
1,000.00	11.25	311.10	995.19	48.25	-55.31	-48.14	1.50	1.50	0.00	
1,100.00	12.75	311.10	1,093.00	61.92	-70.97	-61.78	1.50	1.50	0.00	
1,200.00	14.25	311.10	1,190.24	77.26	-88.57	-77.09	1.50	1.50	0.00	
1,300.00	15.75	311.10	1,286.83	94.27	-108.07	-94.07	1.50	1.50	0.00	
1,400.00	17.25	311.10	1,382.71	112.94	-129.47	-112.70	1.50	1.50	0.00	
1,500.00	18.75	311.10	1,477.81	133.26	-152.76	-132.96	1.50	1.50	0.00	
1,600.00	20.25	311.10	1,572.07	155.20	-177.91	-154.86	1.50	1.50	0.00	
1,700.00	21.75	311.10	1,665.43	178.76	-204.91	-178.36	1.50	1.50	0.00	
1,800.00	23.25	311.10	1,757.81	203.91	-233.75	-203.47	1.50	1.50	0.00	
1,846.04	23.94	311.10	1,800.00	216.03	-247.64	-215.55	1.50	1.50	0.00	
9 5/8"										
1,900.00	24.75	311.10	1,849.16	230.65	-264.40	-230.14	1.50	1.50	0.00	
2,000.00	26.25	311.10	1,939.42	258.95	-296.84	-258.38	1.50	1.50	0.00	
2,100.00	27.75	311.10	2,028.52	288.79	-331.05	-288.16	1.50	1.50	0.00	
2,200.00	29.25	311.10	2,116.40	320.16	-367.01	-319.46	1.50	1.50	0.00	
2,250.00	30.00	311.10	2,159.86	336.41	-385.63	-335.67	1.50	1.50	0.00	
End Nudge @ 2250.00ft										
2,300.00	30.00	311.10	2,203.16	352.84	-404.47	-352.07	0.00	0.00	0.00	
2,400.00	30.00	311.10	2,289.76	385.71	-442.15	-384.86	0.00	0.00	0.00	
2,500.00	30.00	311.10	2,376.37	418.58	-479.83	-417.66	0.00	0.00	0.00	
2,600.00	30.00	311.10	2,462.97	451.45	-517.51	-450.45	0.00	0.00	0.00	
2,700.00	30.00	311.10	2,549.57	484.32	-555.18	-483.25	0.00	0.00	0.00	
2,800.00	30.00	311.10	2,636.17	517.19	-592.86	-516.05	0.00	0.00	0.00	
2,900.00	30.00	311.10	2,722.78	550.06	-630.54	-548.84	0.00	0.00	0.00	
3,000.00	30.00	311.10	2,809.38	582.92	-668.22	-581.64	0.00	0.00	0.00	
3,100.00	30.00	311.10	2,895.98	615.79	-705.90	-614.44	0.00	0.00	0.00	
3,200.00	30.00	311.10	2,982.58	648.66	-743.58	-647.23	0.00	0.00	0.00	
3,300.00	30.00	311.10	3,069.19	681.53	-781.25	-680.03	0.00	0.00	0.00	
3,400.00	30.00	311.10	3,155.79	714.40	-818.93	-712.83	0.00	0.00	0.00	
3,500.00	30.00	311.10	3,242.39	747.27	-856.61	-745.62	0.00	0.00	0.00	
3,600.00	30.00	311.10	3,328.99	780.14	-894.29	-778.42	0.00	0.00	0.00	
3,700.00	30.00	311.10	3,415.60	813.01	-931.97	-811.21	0.00	0.00	0.00	
3,800.00	30.00	311.10	3,502.20	845.87	-969.64	-844.01	0.00	0.00	0.00	
3,900.00	30.00	311.10	3,588.80	878.74	-1,007.32	-876.81	0.00	0.00	0.00	
4,000.00	30.00	311.10	3,675.40	911.61	-1,045.00	-909.60	0.00	0.00	0.00	
4,100.00	30.00	311.10	3,762.01	944.48	-1,082.68	-942.40	0.00	0.00	0.00	
4,200.00	30.00	311.10	3,848.61	977.35	-1,120.36	-975.20	0.00	0.00	0.00	
4,300.00	30.00	311.10	3,935.21	1,010.22	-1,158.03	-1,007.99	0.00	0.00	0.00	
4,333.00	30.00	311.10	3,963.79	1,021.07	-1,170.47	-1,018.82	0.00	0.00	0.00	
Begin Drop @ 4333.00ft										
4,400.00	28.66	311.10	4,022.20	1,042.64	-1,195.20	-1,040.34	2.00	-2.00	0.00	

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 34G-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Site:	2N-65W-22 Powers 3-22 Pad	North Reference:	True
Well:	POWERS 34G-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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)
4,500.00	26.66	311.10	4,110.77	1,073.15	-1,230.18	-1,070.79	2.00	-2.00	0.00
4,600.00	24.66	311.10	4,200.90	1,101.62	-1,262.81	-1,099.19	2.00	-2.00	0.00
4,700.00	22.66	311.10	4,292.49	1,128.00	-1,293.05	-1,125.51	2.00	-2.00	0.00
4,778.14	21.10	311.10	4,365.00	1,147.14	-1,314.99	-1,144.61	2.00	-2.00	0.00
Sussex									
4,800.00	20.66	311.10	4,385.43	1,152.26	-1,320.86	-1,149.72	2.00	-2.00	0.00
4,900.00	18.66	311.10	4,479.59	1,174.38	-1,346.21	-1,171.79	2.00	-2.00	0.00
5,000.00	16.66	311.10	4,574.87	1,194.32	-1,369.07	-1,191.69	2.00	-2.00	0.00
5,100.00	14.66	311.10	4,671.16	1,212.06	-1,389.41	-1,209.39	2.00	-2.00	0.00
5,200.00	12.66	311.10	4,768.32	1,227.59	-1,407.21	-1,224.88	2.00	-2.00	0.00
5,300.00	10.66	311.10	4,866.25	1,240.87	-1,422.44	-1,238.14	2.00	-2.00	0.00
5,400.00	8.66	311.10	4,964.83	1,251.90	-1,435.08	-1,249.14	2.00	-2.00	0.00
5,500.00	6.66	311.10	5,063.93	1,260.66	-1,445.13	-1,257.89	2.00	-2.00	0.00
5,600.00	4.66	311.10	5,163.44	1,267.15	-1,452.56	-1,264.36	2.00	-2.00	0.00
5,700.00	2.66	311.10	5,263.23	1,271.34	-1,457.37	-1,268.54	2.00	-2.00	0.00
5,800.00	0.66	311.10	5,363.19	1,273.25	-1,459.55	-1,270.44	2.00	-2.00	0.00
5,833.00	0.00	0.00	5,396.18	1,273.37	-1,459.69	-1,270.57	2.00	-2.00	148.18
End Drop @ 5833.00ft									
5,900.00	0.00	0.00	5,463.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,000.00	0.00	0.00	5,563.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,100.00	0.00	0.00	5,663.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,200.00	0.00	0.00	5,763.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,300.00	0.00	0.00	5,863.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,400.00	0.00	0.00	5,963.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,500.00	0.00	0.00	6,063.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,600.00	0.00	0.00	6,163.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,700.00	0.00	0.00	6,263.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,800.00	0.00	0.00	6,363.18	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
6,861.87	0.00	0.00	6,425.05	1,273.37	-1,459.69	-1,270.57	0.00	0.00	0.00
KOP @ 6861.87ft									
6,900.00	3.81	180.11	6,463.16	1,272.10	-1,459.70	-1,269.30	10.00	10.00	-471.79
7,000.00	13.81	180.11	6,561.85	1,256.80	-1,459.72	-1,254.00	10.00	10.00	0.00
7,100.00	23.81	180.11	6,656.39	1,224.59	-1,459.78	-1,221.79	10.00	10.00	0.00
7,200.00	33.81	180.11	6,743.90	1,176.46	-1,459.87	-1,173.66	10.00	10.00	0.00
7,300.00	43.81	180.11	6,821.72	1,113.86	-1,459.99	-1,111.06	10.00	10.00	0.00
DLS = 10°/100'									
7,323.51	46.16	180.11	6,838.34	1,097.24	-1,460.02	-1,094.44	10.00	10.00	0.00
Sharon Springs									
7,400.00	53.81	180.11	6,887.49	1,038.70	-1,460.13	-1,035.90	10.00	10.00	0.00
7,420.60	55.87	180.11	6,899.34	1,021.86	-1,460.16	-1,019.06	10.00	10.00	0.00
Niobrara Top									
7,500.00	63.81	180.11	6,939.20	953.26	-1,460.29	-950.46	10.00	10.00	0.00
7,534.11	67.22	180.11	6,953.33	922.23	-1,460.35	-919.42	10.00	10.00	0.00
Niobrara B Bench									
7,600.00	73.81	180.11	6,975.30	860.14	-1,460.47	-857.33	10.00	10.00	0.00
7,700.00	83.81	180.11	6,994.68	762.16	-1,460.65	-759.36	10.00	10.00	0.00
7,758.91	89.70	180.11	6,998.00	703.37	-1,460.76	-700.57	10.00	10.00	0.00
End Build @ 7758.91ft - Target Heel Location - Top of Production									
7,800.00	89.70	180.11	6,998.22	662.29	-1,460.84	-659.48	0.00	0.00	0.00
7,900.00	89.70	180.11	6,998.73	562.29	-1,461.02	-559.48	0.00	0.00	0.00
8,000.00	89.70	180.11	6,999.25	462.29	-1,461.21	-459.48	0.00	0.00	0.00
8,100.00	89.70	180.11	6,999.77	362.29	-1,461.40	-359.48	0.00	0.00	0.00
8,200.00	89.70	180.11	7,000.28	262.29	-1,461.59	-259.48	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 34G-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Site:	2N-65W-22 Powers 3-22 Pad	North Reference:	True
Well:	POWERS 34G-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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)
8,300.00	89.70	180.11	7,000.80	162.29	-1,461.77	-159.49	0.00	0.00	0.00
8,400.00	89.70	180.11	7,001.31	62.29	-1,461.96	-59.49	0.00	0.00	0.00
8,500.00	89.70	180.11	7,001.83	-37.70	-1,462.15	40.51	0.00	0.00	0.00
8,600.00	89.70	180.11	7,002.35	-137.70	-1,462.33	140.51	0.00	0.00	0.00
8,700.00	89.70	180.11	7,002.86	-237.70	-1,462.52	240.51	0.00	0.00	0.00
8,800.00	89.70	180.11	7,003.38	-337.70	-1,462.71	340.51	0.00	0.00	0.00
8,900.00	89.70	180.11	7,003.89	-437.70	-1,462.90	440.51	0.00	0.00	0.00
9,000.00	89.70	180.11	7,004.41	-537.70	-1,463.08	540.50	0.00	0.00	0.00
9,100.00	89.70	180.11	7,004.93	-637.70	-1,463.27	640.50	0.00	0.00	0.00
9,200.00	89.70	180.11	7,005.44	-737.69	-1,463.46	740.50	0.00	0.00	0.00
9,300.00	89.70	180.11	7,005.96	-837.69	-1,463.64	840.50	0.00	0.00	0.00
9,400.00	89.70	180.11	7,006.47	-937.69	-1,463.83	940.50	0.00	0.00	0.00
9,500.00	89.70	180.11	7,006.99	-1,037.69	-1,464.02	1,040.50	0.00	0.00	0.00
9,600.00	89.70	180.11	7,007.51	-1,137.69	-1,464.21	1,140.50	0.00	0.00	0.00
9,700.00	89.70	180.11	7,008.02	-1,237.69	-1,464.39	1,240.50	0.00	0.00	0.00
9,800.00	89.70	180.11	7,008.54	-1,337.68	-1,464.58	1,340.49	0.00	0.00	0.00
9,900.00	89.70	180.11	7,009.05	-1,437.68	-1,464.77	1,440.49	0.00	0.00	0.00
10,000.00	89.70	180.11	7,009.57	-1,537.68	-1,464.95	1,540.49	0.00	0.00	0.00
10,100.00	89.70	180.11	7,010.09	-1,637.68	-1,465.14	1,640.49	0.00	0.00	0.00
10,200.00	89.70	180.11	7,010.60	-1,737.68	-1,465.33	1,740.49	0.00	0.00	0.00
10,300.00	89.70	180.11	7,011.12	-1,837.68	-1,465.52	1,840.49	0.00	0.00	0.00
10,400.00	89.70	180.11	7,011.63	-1,937.68	-1,465.70	1,940.49	0.00	0.00	0.00
10,500.00	89.70	180.11	7,012.15	-2,037.67	-1,465.89	2,040.48	0.00	0.00	0.00
10,600.00	89.70	180.11	7,012.67	-2,137.67	-1,466.08	2,140.48	0.00	0.00	0.00
10,700.00	89.70	180.11	7,013.18	-2,237.67	-1,466.26	2,240.48	0.00	0.00	0.00
10,800.00	89.70	180.11	7,013.70	-2,337.67	-1,466.45	2,340.48	0.00	0.00	0.00
10,900.00	89.70	180.11	7,014.21	-2,437.67	-1,466.64	2,440.48	0.00	0.00	0.00
11,000.00	89.70	180.11	7,014.73	-2,537.67	-1,466.83	2,540.48	0.00	0.00	0.00
11,100.00	89.70	180.11	7,015.25	-2,637.67	-1,467.01	2,640.48	0.00	0.00	0.00
11,200.00	89.70	180.11	7,015.76	-2,737.66	-1,467.20	2,740.48	0.00	0.00	0.00
11,300.00	89.70	180.11	7,016.28	-2,837.66	-1,467.39	2,840.47	0.00	0.00	0.00
11,400.00	89.70	180.11	7,016.79	-2,937.66	-1,467.57	2,940.47	0.00	0.00	0.00
11,500.00	89.70	180.11	7,017.31	-3,037.66	-1,467.76	3,040.47	0.00	0.00	0.00
11,600.00	89.70	180.11	7,017.83	-3,137.66	-1,467.95	3,140.47	0.00	0.00	0.00
11,700.00	89.70	180.11	7,018.34	-3,237.66	-1,468.14	3,240.47	0.00	0.00	0.00
11,800.00	89.70	180.11	7,018.86	-3,337.65	-1,468.32	3,340.47	0.00	0.00	0.00
11,900.00	89.70	180.11	7,019.37	-3,437.65	-1,468.51	3,440.47	0.00	0.00	0.00
12,000.00	89.70	180.11	7,019.89	-3,537.65	-1,468.70	3,540.46	0.00	0.00	0.00
12,100.00	89.70	180.11	7,020.41	-3,637.65	-1,468.88	3,640.46	0.00	0.00	0.00
12,200.00	89.70	180.11	7,020.92	-3,737.65	-1,469.07	3,740.46	0.00	0.00	0.00
12,300.00	89.70	180.11	7,021.44	-3,837.65	-1,469.26	3,840.46	0.00	0.00	0.00
12,400.00	89.70	180.11	7,021.95	-3,937.65	-1,469.45	3,940.46	0.00	0.00	0.00
12,500.00	89.70	180.11	7,022.47	-4,037.64	-1,469.63	4,040.46	0.00	0.00	0.00
12,600.00	89.70	180.11	7,022.99	-4,137.64	-1,469.82	4,140.46	0.00	0.00	0.00
12,700.00	89.70	180.11	7,023.50	-4,237.64	-1,470.01	4,240.46	0.00	0.00	0.00
12,800.00	89.70	180.11	7,024.02	-4,337.64	-1,470.19	4,340.45	0.00	0.00	0.00
12,900.00	89.70	180.11	7,024.53	-4,437.64	-1,470.38	4,440.45	0.00	0.00	0.00
12,990.26	89.70	180.11	7,025.00	-4,527.90	-1,470.55	4,530.71	0.00	0.00	0.00
TD Well @ 12990.26ft - Target Toe Location - Powers 34G-22HZ_BHL									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well POWERS 34G-22HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4900.00usft (D Rig)
Site:	2N-65W-22 Powers 3-22 Pad	North Reference:	True
Well:	POWERS 34G-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-3		

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)		
Powers 34G-22HZ_SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,574,017.56	1,737,126.03	40.129333	-104.654019
2N-R65W-Sec. 22_Secti - plan misses target center by 2418.37usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	-11.00	436.00	2,378.72	14,574,462.82	1,739,503.03	40.130530	-104.645509
Point 1			-11.00	316.49	-3,930.62	14,574,764.01	1,735,571.20		
Point 2			-11.00	307.64	1,360.81	14,574,775.76	1,740,862.63		
Point 3			-11.00	-2,335.49	1,350.05	14,572,132.60	1,740,862.16		
Point 4			-11.00	-4,979.02	1,338.74	14,569,489.05	1,740,861.14		
Point 5			-11.00	-5,015.26	-3,908.08	14,569,432.39	1,735,614.50		
Point 6			-11.00	-2,350.00	-3,919.44	14,572,097.58	1,735,592.76		
Powers 34G-22HZ_BHL - plan hits target center - Point	0.00	0.00	7,025.00	-4,527.90	-1,470.55	14,569,483.97	1,735,673.11	40.116899	-104.659279

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,846.04	1,800.00	9 5/8"	9-5/8	13-1/2	
7,758.91	6,998.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,778.14	4,365.00	Sussex		0.00		
7,323.51	6,838.34	Sharon Springs		0.00		
7,420.60	6,899.34	Niobrara Top		0.00		
7,534.11	6,953.33	Niobrara B Bench		0.00		
7,758.91	6,998.00	Target Heel Location		0.00		
12,990.26	7,025.00	Target Toe Location		0.00		

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	
2,250.00	2,159.86	336.41	-385.63	End Nudge @ 2250.00ft	
4,333.00	3,963.79	1,021.07	-1,170.47	Begin Drop @ 4333.00ft	
5,833.00	5,396.18	1,273.37	-1,459.69	End Drop @ 5833.00ft	
6,861.87	6,425.05	1,273.37	-1,459.69	KOP @ 6861.87ft	
7,300.00	6,821.72	1,113.86	-1,459.99	DLS = 10°/100'	
7,758.91	6,998.00	703.37	-1,460.76	End Build @ 7758.91ft	
12,990.26	7,025.00	-4,527.90	-1,470.55	TD Well @ 12990.26ft	