

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-67W-23 Puma 13-23HZ Pad
PUMA 30N-14HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

05 August, 2015

Project: WELD-NAD83-UTMFT13N
Site: 1N-67W-23 Puma 13-23HZ Pad
Well: PUMA 30N-14HZ
Wellbore: Plan A
Design: Permit Rev-1

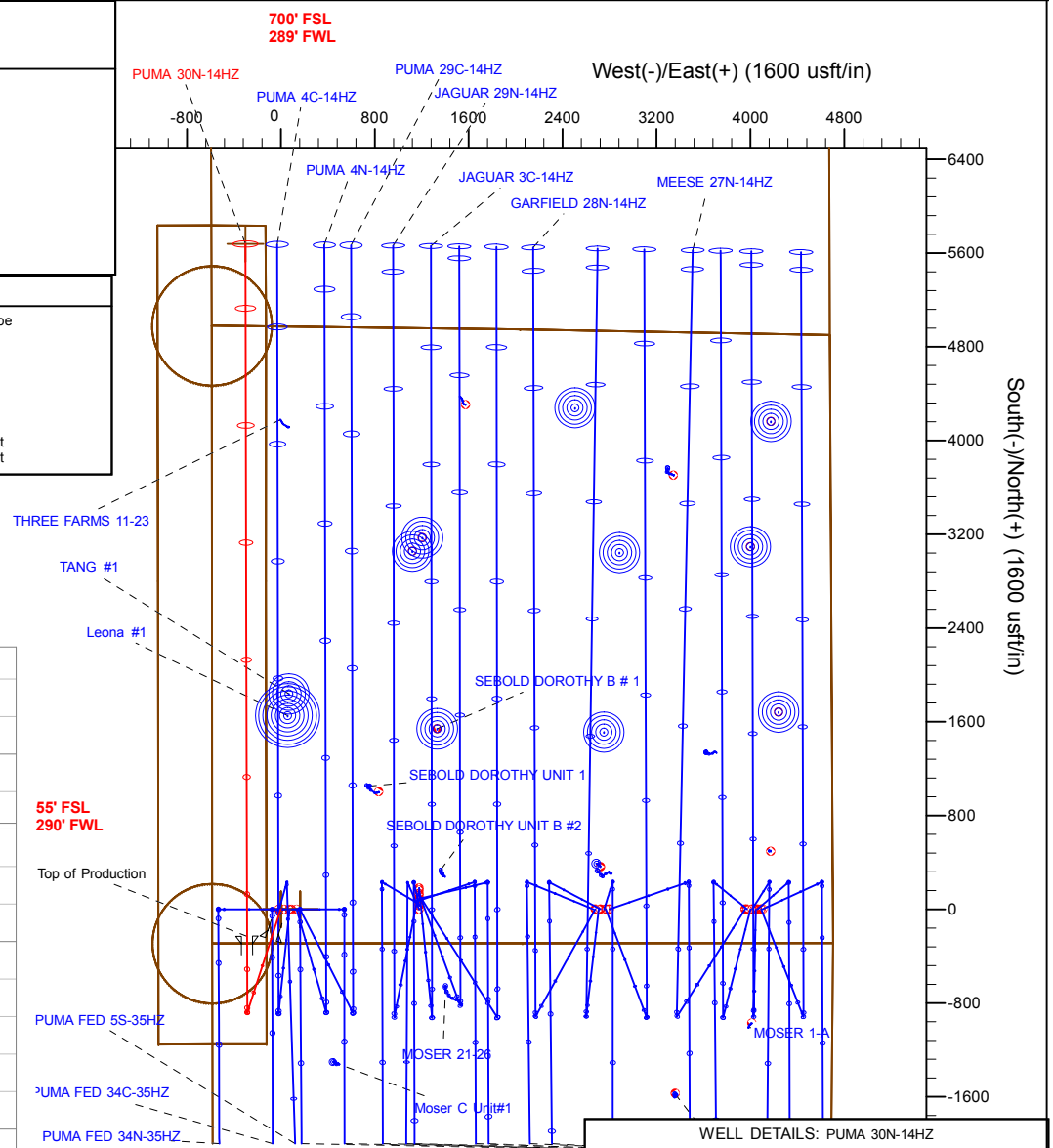
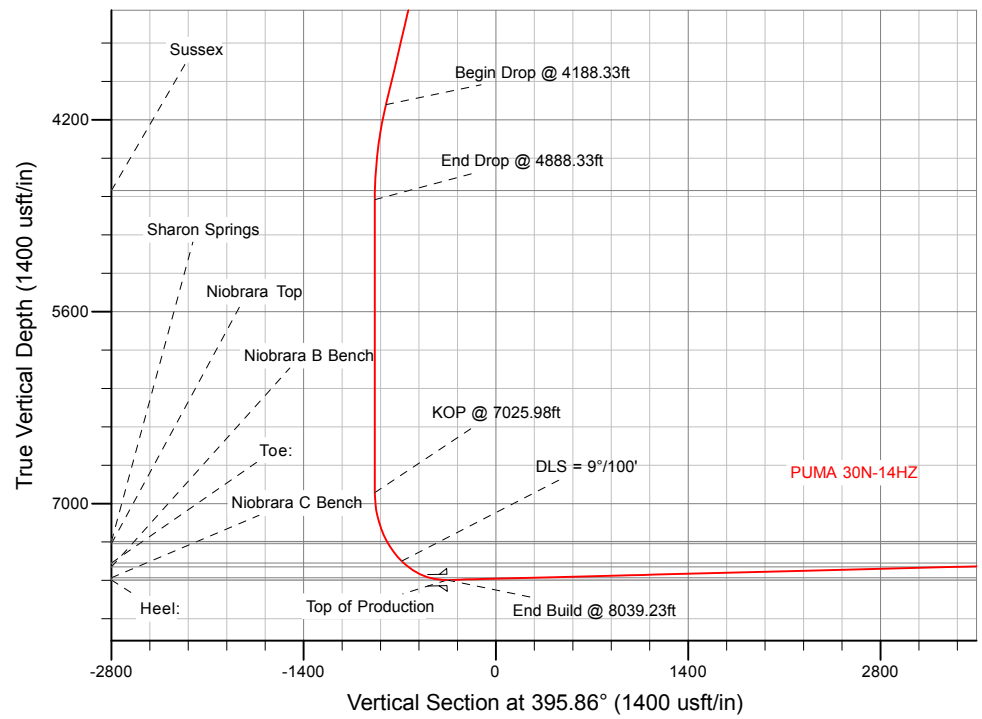
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	1183.33	14.00	198.00	1174.07	-107.91	-35.06	1.50	198.00	-107.99	
4	4188.33	14.00	198.00	4089.81	-799.30	-259.71	0.00	0.00	-799.94	
5	4888.33	0.00	0.00	4782.87	-880.23	-286.01	2.00	180.00	-880.93	
6	7025.98	0.00	0.00	6920.52	-880.23	-286.01	0.00	0.00	-880.93	
7	8039.23	91.19	359.86	7557.00	-230.37	-287.56	9.00	359.86	-355.16	
8	13949.35	91.19	359.86	7434.00	5678.45	-301.69	0.00	0.00	4425.37	PUMA 30N-14HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PUMA 30N-14HZ_SHL	0.00	0.00	0.00	40.030156	-104.865178	Point
PUMA 30N-14HZ_BHL	7434.00	5678.45	-301.69	40.045750	-104.866256	Point



WELL DETAILS: PUMA 30N-14HZ	
Ground Level:	4990.00
RKB = 17' @ 5007.00usft (D Rig)	
Plan: Permit Rev-1 (PUMA 30N-14HZ/Plan A)	
Created By: Clint Eshelman	Date: 8/5/2015
Reviewed: _____	Date: _____

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	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		1N-67W-23 Puma 13-23HZ Pad			
Site Position:		Northing:	14,537,743.06 usft	Latitude:	40.030156
From:	Lat/Long	Easting:	1,678,142.25 usft	Longitude:	-104.865231
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09 °

Well	PUMA 30N-14HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,537,743.09 usft	Latitude:	40.030156
	+E/-W	14.84 usft	Easting:	1,678,157.08 usft	Longitude:	-104.865178
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,990.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/3/2015	8.33	66.59	52,490

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	395.86

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	
1,183.33	14.00	198.00	1,174.07	-107.91	-35.06	1.50	1.50	0.00	198.00	
4,188.33	14.00	198.00	4,089.81	-799.30	-259.71	0.00	0.00	0.00	0.00	
4,888.33	0.00	0.00	4,782.87	-880.23	-286.01	2.00	-2.00	0.00	180.00	
7,025.98	0.00	0.00	6,920.52	-880.23	-286.01	0.00	0.00	0.00	0.00	
8,039.23	91.19	359.86	7,557.00	-230.37	-287.56	9.00	9.00	-0.01	359.86	
13,949.35	91.19	359.86	7,434.00	5,678.45	-301.69	0.00	0.00	0.00	0.00	PUMA 30N-14HZ_BH

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	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	
PUMA 30N-14HZ_Drilling Window - PUMA 30N-14HZ_460 Radii1 - 1N-R67W-Sec. 14_Section lines - 1N-R67W-Sec. 35_Section lines - 1N-F										
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	198.00	300.00	-0.31	-0.10	-0.31	1.50	1.50	0.00	
400.00	2.25	198.00	399.96	-2.80	-0.91	-2.80	1.50	1.50	0.00	
500.00	3.75	198.00	499.82	-7.78	-2.53	-7.78	1.50	1.50	0.00	
600.00	5.25	198.00	599.51	-15.24	-4.95	-15.25	1.50	1.50	0.00	
700.00	6.75	198.00	698.96	-25.18	-8.18	-25.20	1.50	1.50	0.00	
800.00	8.25	198.00	798.10	-37.59	-12.22	-37.62	1.50	1.50	0.00	
900.00	9.75	198.00	896.87	-52.47	-17.05	-52.51	1.50	1.50	0.00	
1,000.00	11.25	198.00	995.19	-69.80	-22.68	-69.86	1.50	1.50	0.00	
1,100.00	12.75	198.00	1,093.00	-89.58	-29.10	-89.65	1.50	1.50	0.00	
1,183.33	14.00	198.00	1,174.07	-107.91	-35.06	-107.99	1.50	1.50	0.00	
End Nudge @ 1183.33ft										
1,200.00	14.00	198.00	1,190.25	-111.74	-36.31	-111.83	0.00	0.00	0.00	
1,300.00	14.00	198.00	1,287.27	-134.75	-43.78	-134.86	0.00	0.00	0.00	
1,400.00	14.00	198.00	1,384.30	-157.76	-51.26	-157.88	0.00	0.00	0.00	
1,460.49	14.00	198.00	1,443.00	-171.68	-55.78	-171.81	0.00	0.00	0.00	
Fox Hills										
1,500.00	14.00	198.00	1,481.33	-180.77	-58.74	-180.91	0.00	0.00	0.00	
1,600.00	14.00	198.00	1,578.36	-203.78	-66.21	-203.94	0.00	0.00	0.00	
1,700.00	14.00	198.00	1,675.39	-226.78	-73.69	-226.96	0.00	0.00	0.00	
1,800.00	14.00	198.00	1,772.42	-249.79	-81.16	-249.99	0.00	0.00	0.00	
1,828.42	14.00	198.00	1,800.00	-256.33	-83.29	-256.53	0.00	0.00	0.00	
9 5/8"										
1,900.00	14.00	198.00	1,869.45	-272.80	-88.64	-273.02	0.00	0.00	0.00	
2,000.00	14.00	198.00	1,966.48	-295.81	-96.11	-296.04	0.00	0.00	0.00	
2,100.00	14.00	198.00	2,063.51	-318.82	-103.59	-319.07	0.00	0.00	0.00	
2,200.00	14.00	198.00	2,160.54	-341.82	-111.07	-342.10	0.00	0.00	0.00	
2,300.00	14.00	198.00	2,257.57	-364.83	-118.54	-365.12	0.00	0.00	0.00	
2,400.00	14.00	198.00	2,354.60	-387.84	-126.02	-388.15	0.00	0.00	0.00	
2,500.00	14.00	198.00	2,451.63	-410.85	-133.49	-411.17	0.00	0.00	0.00	
2,600.00	14.00	198.00	2,548.66	-433.86	-140.97	-434.20	0.00	0.00	0.00	
2,700.00	14.00	198.00	2,645.69	-456.87	-148.44	-457.23	0.00	0.00	0.00	
2,800.00	14.00	198.00	2,742.72	-479.87	-155.92	-480.25	0.00	0.00	0.00	
2,900.00	14.00	198.00	2,839.75	-502.88	-163.40	-503.28	0.00	0.00	0.00	
3,000.00	14.00	198.00	2,936.78	-525.89	-170.87	-526.31	0.00	0.00	0.00	
3,100.00	14.00	198.00	3,033.81	-548.90	-178.35	-549.33	0.00	0.00	0.00	
3,200.00	14.00	198.00	3,130.84	-571.91	-185.82	-572.36	0.00	0.00	0.00	
3,300.00	14.00	198.00	3,227.87	-594.91	-193.30	-595.38	0.00	0.00	0.00	
3,400.00	14.00	198.00	3,324.90	-617.92	-200.78	-618.41	0.00	0.00	0.00	
3,500.00	14.00	198.00	3,421.93	-640.93	-208.25	-641.44	0.00	0.00	0.00	
3,600.00	14.00	198.00	3,518.95	-663.94	-215.73	-664.46	0.00	0.00	0.00	
3,700.00	14.00	198.00	3,615.98	-686.95	-223.20	-687.49	0.00	0.00	0.00	
3,800.00	14.00	198.00	3,713.01	-709.96	-230.68	-710.52	0.00	0.00	0.00	
3,900.00	14.00	198.00	3,810.04	-732.96	-238.15	-733.54	0.00	0.00	0.00	
4,000.00	14.00	198.00	3,907.07	-755.97	-245.63	-756.57	0.00	0.00	0.00	
4,100.00	14.00	198.00	4,004.10	-778.98	-253.11	-779.60	0.00	0.00	0.00	
4,188.33	14.00	198.00	4,089.81	-799.30	-259.71	-799.93	0.00	0.00	0.00	
Begin Drop @ 4188.33ft										

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	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)
4,200.00	13.77	198.00	4,101.14	-801.97	-260.57	-802.60	2.00	-2.00	0.00
4,300.00	11.77	198.00	4,198.66	-822.98	-267.40	-823.63	2.00	-2.00	0.00
4,400.00	9.77	198.00	4,296.90	-840.75	-273.18	-841.41	2.00	-2.00	0.00
4,500.00	7.77	198.00	4,395.72	-855.24	-277.88	-855.92	2.00	-2.00	0.00
4,600.00	5.77	198.00	4,495.02	-866.45	-281.53	-867.13	2.00	-2.00	0.00
4,700.00	3.77	198.00	4,594.67	-874.35	-284.09	-875.04	2.00	-2.00	0.00
4,800.00	1.77	198.00	4,694.55	-878.94	-285.58	-879.64	2.00	-2.00	0.00
4,821.46	1.34	198.00	4,716.00	-879.49	-285.76	-880.19	2.00	-2.00	0.00
Sussex									
4,888.33	0.00	198.00	4,782.86	-880.23	-286.01	-880.93	2.00	-2.00	0.00
End Drop @ 4888.33ft									
4,900.00	0.00	0.00	4,794.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,000.00	0.00	0.00	4,894.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,100.00	0.00	0.00	4,994.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,200.00	0.00	0.00	5,094.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,300.00	0.00	0.00	5,194.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,400.00	0.00	0.00	5,294.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,500.00	0.00	0.00	5,394.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,600.00	0.00	0.00	5,494.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,700.00	0.00	0.00	5,594.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,800.00	0.00	0.00	5,694.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
5,900.00	0.00	0.00	5,794.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,000.00	0.00	0.00	5,894.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,100.00	0.00	0.00	5,994.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,200.00	0.00	0.00	6,094.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,300.00	0.00	0.00	6,194.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,400.00	0.00	0.00	6,294.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,500.00	0.00	0.00	6,394.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,600.00	0.00	0.00	6,494.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,700.00	0.00	0.00	6,594.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,800.00	0.00	0.00	6,694.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
6,900.00	0.00	0.00	6,794.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
7,000.00	0.00	0.00	6,894.53	-880.23	-286.01	-880.93	0.00	0.00	0.00
7,025.98	0.00	0.00	6,920.51	-880.23	-286.01	-880.93	0.00	0.00	0.00
KOP @ 7025.98ft									
7,100.00	6.66	359.86	6,994.37	-875.94	-286.02	-877.45	9.00	9.00	0.00
7,200.00	15.66	359.86	7,092.38	-856.60	-286.06	-861.81	9.00	9.00	0.00
7,300.00	24.66	359.86	7,186.15	-822.17	-286.14	-833.95	9.00	9.00	0.00
7,400.00	33.66	359.86	7,273.39	-773.49	-286.26	-794.57	9.00	9.00	0.00
7,403.26	33.95	359.86	7,276.09	-771.68	-286.27	-793.10	9.00	9.00	0.00
Sharon Springs									
7,423.98	35.82	359.86	7,293.09	-759.83	-286.29	-783.51	9.00	9.00	0.00
Niobrara Top									
7,500.00	42.66	359.86	7,351.93	-711.77	-286.41	-744.63	9.00	9.00	0.00
7,600.00	51.66	359.86	7,419.86	-638.52	-286.58	-685.37	9.00	9.00	0.00
DLS = 9°/100'									
7,673.24	58.25	359.86	7,461.88	-578.59	-286.73	-636.88	9.00	9.00	0.00
Niobrara B Bench									
7,700.00	60.66	359.86	7,475.48	-555.54	-286.78	-618.24	9.00	9.00	0.00
7,800.00	69.66	359.86	7,517.45	-464.88	-287.00	-544.89	9.00	9.00	0.00
7,877.16	76.61	359.86	7,539.82	-391.09	-287.18	-485.19	9.00	9.00	0.00
Niobrara C Bench									
7,900.00	78.66	359.86	7,544.71	-368.78	-287.23	-467.14	9.00	9.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	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	87.66	359.86	7,556.61	-269.59	-287.47	-386.89	9.00	9.00	0.00
8,039.23	91.19	359.86	7,557.00	-230.37	-287.56	-355.16	9.00	9.00	0.00
End Build @ 8039.23ft - Heel: - Top of Production									
8,100.00	91.19	359.86	7,555.73	-169.61	-287.71	-306.00	0.00	0.00	0.00
8,200.00	91.19	359.86	7,553.65	-69.64	-287.94	-225.12	0.00	0.00	0.00
8,300.00	91.19	359.86	7,551.57	30.34	-288.18	-144.23	0.00	0.00	0.00
8,400.00	91.19	359.86	7,549.49	130.32	-288.42	-63.34	0.00	0.00	0.00
8,500.00	91.19	359.86	7,547.41	230.30	-288.66	17.54	0.00	0.00	0.00
8,600.00	91.19	359.86	7,545.33	330.28	-288.90	98.43	0.00	0.00	0.00
8,700.00	91.19	359.86	7,543.25	430.25	-289.14	179.32	0.00	0.00	0.00
8,800.00	91.19	359.86	7,541.17	530.23	-289.38	260.21	0.00	0.00	0.00
8,900.00	91.19	359.86	7,539.09	630.21	-289.62	341.09	0.00	0.00	0.00
9,000.00	91.19	359.86	7,537.00	730.19	-289.86	421.98	0.00	0.00	0.00
9,100.00	91.19	359.86	7,534.92	830.17	-290.10	502.87	0.00	0.00	0.00
9,200.00	91.19	359.86	7,532.84	930.14	-290.34	583.76	0.00	0.00	0.00
9,300.00	91.19	359.86	7,530.76	1,030.12	-290.58	664.64	0.00	0.00	0.00
9,400.00	91.19	359.86	7,528.68	1,130.10	-290.81	745.53	0.00	0.00	0.00
9,500.00	91.19	359.86	7,526.60	1,230.08	-291.05	826.42	0.00	0.00	0.00
9,600.00	91.19	359.86	7,524.52	1,330.06	-291.29	907.30	0.00	0.00	0.00
9,700.00	91.19	359.86	7,522.44	1,430.03	-291.53	988.19	0.00	0.00	0.00
9,800.00	91.19	359.86	7,520.36	1,530.01	-291.77	1,069.08	0.00	0.00	0.00
9,900.00	91.19	359.86	7,518.27	1,629.99	-292.01	1,149.97	0.00	0.00	0.00
10,000.00	91.19	359.86	7,516.19	1,729.97	-292.25	1,230.85	0.00	0.00	0.00
10,100.00	91.19	359.86	7,514.11	1,829.95	-292.49	1,311.74	0.00	0.00	0.00
10,200.00	91.19	359.86	7,512.03	1,929.92	-292.73	1,392.63	0.00	0.00	0.00
10,300.00	91.19	359.86	7,509.95	2,029.90	-292.97	1,473.51	0.00	0.00	0.00
10,400.00	91.19	359.86	7,507.87	2,129.88	-293.21	1,554.40	0.00	0.00	0.00
10,500.00	91.19	359.86	7,505.79	2,229.86	-293.45	1,635.29	0.00	0.00	0.00
10,600.00	91.19	359.86	7,503.71	2,329.84	-293.68	1,716.18	0.00	0.00	0.00
10,700.00	91.19	359.86	7,501.62	2,429.81	-293.92	1,797.06	0.00	0.00	0.00
10,800.00	91.19	359.86	7,499.54	2,529.79	-294.16	1,877.95	0.00	0.00	0.00
10,900.00	91.19	359.86	7,497.46	2,629.77	-294.40	1,958.84	0.00	0.00	0.00
11,000.00	91.19	359.86	7,495.38	2,729.75	-294.64	2,039.72	0.00	0.00	0.00
11,100.00	91.19	359.86	7,493.30	2,829.73	-294.88	2,120.61	0.00	0.00	0.00
11,200.00	91.19	359.86	7,491.22	2,929.71	-295.12	2,201.50	0.00	0.00	0.00
11,300.00	91.19	359.86	7,489.14	3,029.68	-295.36	2,282.39	0.00	0.00	0.00
11,400.00	91.19	359.86	7,487.06	3,129.66	-295.60	2,363.27	0.00	0.00	0.00
11,500.00	91.19	359.86	7,484.98	3,229.64	-295.84	2,444.16	0.00	0.00	0.00
11,600.00	91.19	359.86	7,482.89	3,329.62	-296.08	2,525.05	0.00	0.00	0.00
11,700.00	91.19	359.86	7,480.81	3,429.60	-296.32	2,605.93	0.00	0.00	0.00
11,800.00	91.19	359.86	7,478.73	3,529.57	-296.55	2,686.82	0.00	0.00	0.00
11,900.00	91.19	359.86	7,476.65	3,629.55	-296.79	2,767.71	0.00	0.00	0.00
12,000.00	91.19	359.86	7,474.57	3,729.53	-297.03	2,848.60	0.00	0.00	0.00
12,100.00	91.19	359.86	7,472.49	3,829.51	-297.27	2,929.48	0.00	0.00	0.00
12,200.00	91.19	359.86	7,470.41	3,929.49	-297.51	3,010.37	0.00	0.00	0.00
12,300.00	91.19	359.86	7,468.33	4,029.46	-297.75	3,091.26	0.00	0.00	0.00
12,400.00	91.19	359.86	7,466.24	4,129.44	-297.99	3,172.15	0.00	0.00	0.00
12,500.00	91.19	359.86	7,464.16	4,229.42	-298.23	3,253.03	0.00	0.00	0.00
12,600.00	91.19	359.86	7,462.08	4,329.40	-298.47	3,333.92	0.00	0.00	0.00
12,700.00	91.19	359.86	7,460.00	4,429.38	-298.71	3,414.81	0.00	0.00	0.00
12,800.00	91.19	359.86	7,457.92	4,529.35	-298.95	3,495.69	0.00	0.00	0.00
12,900.00	91.19	359.86	7,455.84	4,629.33	-299.19	3,576.58	0.00	0.00	0.00
13,000.00	91.19	359.86	7,453.76	4,729.31	-299.42	3,657.47	0.00	0.00	0.00
13,100.00	91.19	359.86	7,451.68	4,829.29	-299.66	3,738.36	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	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)
13,200.00	91.19	359.86	7,449.60	4,929.27	-299.90	3,819.24	0.00	0.00	0.00
13,300.00	91.19	359.86	7,447.51	5,029.24	-300.14	3,900.13	0.00	0.00	0.00
13,400.00	91.19	359.86	7,445.43	5,129.22	-300.38	3,981.02	0.00	0.00	0.00
13,500.00	91.19	359.86	7,443.35	5,229.20	-300.62	4,061.90	0.00	0.00	0.00
13,600.00	91.19	359.86	7,441.27	5,329.18	-300.86	4,142.79	0.00	0.00	0.00
13,700.00	91.19	359.86	7,439.19	5,429.16	-301.10	4,223.68	0.00	0.00	0.00
13,800.00	91.19	359.86	7,437.11	5,529.13	-301.34	4,304.57	0.00	0.00	0.00
13,900.00	91.19	359.86	7,435.03	5,629.11	-301.58	4,385.45	0.00	0.00	0.00
13,949.35	91.19	359.86	7,434.00	5,678.45	-301.69	4,425.37	0.00	0.00	0.00
TD Well @ 13949.35ft - Toe: - PUMA 30N-14HZ_BHL									

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	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)		
1N-R67W-Sec. 35_Secti	0.00	0.00	0.00	0.36	164.88	14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 164.88usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-5,567.60	-737.69	14,532,174.99	1,677,592.70		
Point 2			0.00	-5,567.35	1,905.22	14,532,179.24	1,680,235.61		
Point 3			0.00	-5,567.85	4,548.01	14,532,182.74	1,682,878.39		
Point 4			0.00	-10,841.76	4,559.90	14,526,908.85	1,682,898.27		
Point 5			0.00	-10,843.80	1,928.43	14,526,902.83	1,680,266.80		
Point 6			0.00	-10,844.86	-702.65	14,526,897.79	1,677,635.73		
Point 7			0.00	-8,206.73	-719.46	14,529,535.89	1,677,614.92		
1N-R67W-Sec. 23_Secti	0.00	0.00	0.00	0.36	164.88	14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 164.88usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	4,981.70	-753.18	14,542,724.24	1,677,561.24		
Point 2			0.00	4,948.86	1,873.61	14,542,695.38	1,680,188.08		
Point 3			0.00	4,901.92	4,512.15	14,542,652.43	1,682,826.69		
Point 4			0.00	-288.13	4,540.16	14,537,462.44	1,682,862.55		
Point 5			0.00	-289.24	1,894.92	14,537,457.33	1,680,217.32		
Point 6			0.00	-290.30	-750.41	14,537,452.27	1,677,571.99		
Point 7			0.00	2,345.83	-751.96	14,540,088.39	1,677,566.45		
1N-R67W-Sec. 26_Secti	0.00	0.00	0.00	0.36	164.88	14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 164.88usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-290.30	-750.41	14,537,452.27	1,677,571.99		
Point 2			0.00	-289.24	1,894.92	14,537,457.33	1,680,217.32		
Point 3			0.00	-288.13	4,540.16	14,537,462.44	1,682,862.55		
Point 4			0.00	-2,913.10	4,515.39	14,534,837.44	1,682,841.76		
Point 5			0.00	-5,567.85	4,548.01	14,532,182.74	1,682,878.39		
Point 6			0.00	-5,567.35	1,905.22	14,532,179.24	1,680,235.61		
Point 7			0.00	-5,567.60	-737.69	14,532,174.99	1,677,592.70		
Point 8			0.00	-2,929.65	-743.92	14,534,812.93	1,677,582.48		
PUMA 30N-14HZ_460 R	0.00	0.00	0.00	0.00	0.00	14,537,743.09	1,678,157.08	40.030156	-104.865178
- plan hits target center									
- Polygon									
Point 1			0.00	5,489.73	-585.82	14,543,231.91	1,677,562.96		
Point 2			0.00	5,489.31	-564.60	14,543,231.53	1,677,584.18		
Point 3			0.00	5,488.00	-543.42	14,543,230.25	1,677,605.36		
Point 4			0.00	5,485.81	-522.31	14,543,228.09	1,677,626.47		
Point 5			0.00	5,482.73	-501.32	14,543,225.04	1,677,647.47		
Point 6			0.00	5,478.79	-480.47	14,543,221.13	1,677,668.32		
Point 7			0.00	5,473.99	-459.80	14,543,216.36	1,677,689.00		
Point 8			0.00	5,468.33	-439.35	14,543,210.74	1,677,709.46		
Point 9			0.00	5,461.83	-419.15	14,543,204.27	1,677,729.67		
Point 10			0.00	5,454.49	-399.24	14,543,196.96	1,677,749.59		
Point 11			0.00	5,446.33	-379.65	14,543,188.83	1,677,769.19		
Point 12			0.00	5,437.36	-360.43	14,543,179.88	1,677,788.43		
Point 13			0.00	5,427.60	-341.58	14,543,170.15	1,677,807.29		
Point 14			0.00	5,417.06	-323.17	14,543,159.64	1,677,825.72		
Point 15			0.00	5,405.77	-305.20	14,543,148.38	1,677,843.70		
Point 16			0.00	5,393.74	-287.72	14,543,136.37	1,677,861.20		
Point 17			0.00	5,380.98	-270.75	14,543,123.64	1,677,878.19		
Point 18			0.00	5,367.55	-254.33	14,543,110.24	1,677,894.63		
Point 19			0.00	5,353.44	-238.49	14,543,096.15	1,677,910.49		
Point 20			0.00	5,338.67	-223.25	14,543,081.40	1,677,925.75		
Point 21			0.00	5,323.29	-208.63	14,543,066.04	1,677,940.40		
Point 22			0.00	5,307.32	-194.66	14,543,050.10	1,677,954.39		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 23	0.00	5,290.77	-181.38	14,543,033.57	1,677,967.70
Point 24	0.00	5,273.69	-168.79	14,543,016.50	1,677,980.31
Point 25	0.00	5,256.10	-156.92	14,542,998.93	1,677,992.21
Point 26	0.00	5,238.03	-145.80	14,542,980.88	1,678,003.36
Point 27	0.00	5,219.51	-135.44	14,542,962.38	1,678,013.74
Point 28	0.00	5,200.59	-125.85	14,542,943.47	1,678,023.36
Point 29	0.00	5,181.27	-117.06	14,542,924.16	1,678,032.18
Point 30	0.00	5,161.60	-109.08	14,542,904.51	1,678,040.19
Point 31	0.00	5,141.63	-101.93	14,542,884.55	1,678,047.37
Point 32	0.00	5,121.37	-95.62	14,542,864.30	1,678,053.71
Point 33	0.00	5,100.86	-90.15	14,542,843.79	1,678,059.21
Point 34	0.00	5,080.15	-85.54	14,542,823.09	1,678,063.86
Point 35	0.00	5,059.27	-81.80	14,542,802.22	1,678,067.63
Point 36	0.00	5,038.24	-78.92	14,542,781.19	1,678,070.54
Point 37	0.00	5,017.12	-76.93	14,542,760.07	1,678,072.56
Point 38	0.00	4,995.93	-75.82	14,542,738.89	1,678,073.70
Point 39	0.00	4,974.71	-75.59	14,542,717.67	1,678,073.97
Point 40	0.00	4,953.50	-76.23	14,542,696.46	1,678,073.36
Point 41	0.00	4,932.33	-77.76	14,542,675.28	1,678,071.86
Point 42	0.00	4,911.26	-80.17	14,542,654.21	1,678,069.48
Point 43	0.00	4,890.29	-83.47	14,542,633.23	1,678,066.21
Point 44	0.00	4,869.48	-87.62	14,542,612.42	1,678,062.09
Point 45	0.00	4,848.86	-92.64	14,542,591.79	1,678,057.11
Point 46	0.00	4,828.47	-98.51	14,542,571.39	1,678,051.27
Point 47	0.00	4,808.34	-105.22	14,542,551.25	1,678,044.59
Point 48	0.00	4,788.51	-112.77	14,542,531.41	1,678,037.07
Point 49	0.00	4,769.01	-121.13	14,542,511.90	1,678,028.74
Point 50	0.00	4,749.87	-130.30	14,542,492.74	1,678,019.60
Point 51	0.00	4,731.14	-140.26	14,542,474.00	1,678,009.66
Point 52	0.00	4,712.82	-150.98	14,542,455.66	1,677,998.97
Point 53	0.00	4,694.98	-162.46	14,542,437.81	1,677,987.52
Point 54	0.00	4,677.63	-174.68	14,542,420.44	1,677,975.32
Point 55	0.00	4,660.80	-187.60	14,542,403.59	1,677,962.43
Point 56	0.00	4,644.52	-201.22	14,542,387.29	1,677,948.83
Point 57	0.00	4,628.82	-215.49	14,542,371.56	1,677,934.59
Point 58	0.00	4,613.73	-230.40	14,542,356.45	1,677,919.70
Point 59	0.00	4,599.28	-245.95	14,542,341.98	1,677,904.17
Point 60	0.00	4,585.48	-262.07	14,542,328.15	1,677,888.07
Point 61	0.00	4,572.37	-278.75	14,542,315.02	1,677,871.41
Point 62	0.00	4,559.95	-295.96	14,542,302.57	1,677,854.22
Point 63	0.00	4,548.27	-313.67	14,542,290.87	1,677,836.53
Point 64	0.00	4,537.34	-331.85	14,542,279.91	1,677,818.37
Point 65	0.00	4,527.16	-350.48	14,542,269.70	1,677,799.75
Point 66	0.00	4,517.77	-369.51	14,542,260.28	1,677,780.74
Point 67	0.00	4,509.19	-388.91	14,542,251.67	1,677,761.35
Point 68	0.00	4,501.41	-408.65	14,542,243.86	1,677,741.62
Point 69	0.00	4,494.47	-428.70	14,542,236.89	1,677,721.58
Point 70	0.00	4,488.36	-449.02	14,542,230.75	1,677,701.27
Point 71	0.00	4,483.11	-469.59	14,542,225.47	1,677,680.71
Point 72	0.00	4,478.72	-490.35	14,542,221.05	1,677,659.96
Point 73	0.00	4,475.20	-511.27	14,542,217.50	1,677,639.04
Point 74	0.00	4,472.54	-532.33	14,542,214.81	1,677,617.99
Point 75	0.00	4,470.76	-553.47	14,542,212.99	1,677,596.85
Point 76	0.00	4,469.87	-574.67	14,542,212.07	1,677,575.65
Point 77	0.00	4,469.86	-596.93	14,542,212.03	1,677,553.39
Point 78	0.00	4,470.73	-617.09	14,542,212.87	1,677,533.23
Point 79	0.00	4,472.48	-638.24	14,542,214.59	1,677,512.08
Point 80	0.00	4,475.11	-659.29	14,542,217.18	1,677,491.02
Point 81	0.00	4,478.62	-680.22	14,542,220.66	1,677,470.09
Point 82	0.00	4,482.99	-700.98	14,542,225.00	1,677,449.32
Point 83	0.00	4,488.23	-721.55	14,542,230.21	1,677,428.74
Point 84	0.00	4,494.31	-741.88	14,542,236.26	1,677,408.40
Point 85	0.00	4,501.23	-761.93	14,542,243.15	1,677,388.34
Point 86	0.00	4,508.99	-781.69	14,542,250.88	1,677,368.57

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 87	0.00	4,517.55	-801.10	14,542,259.41	1,677,349.15
Point 88	0.00	4,526.92	-820.15	14,542,268.75	1,677,330.08
Point 89	0.00	4,537.06	-838.78	14,542,278.86	1,677,311.44
Point 90	0.00	4,547.98	-856.97	14,542,289.75	1,677,293.23
Point 91	0.00	4,559.65	-874.70	14,542,301.40	1,677,275.48
Point 92	0.00	4,572.04	-891.93	14,542,313.76	1,677,258.24
Point 93	0.00	4,585.14	-908.62	14,542,326.84	1,677,241.53
Point 94	0.00	4,598.91	-924.76	14,542,340.58	1,677,225.36
Point 95	0.00	4,613.36	-940.31	14,542,355.01	1,677,209.79
Point 96	0.00	4,628.43	-955.23	14,542,370.06	1,677,194.85
Point 97	0.00	4,644.11	-969.53	14,542,385.71	1,677,180.53
Point 98	0.00	4,660.38	-983.16	14,542,401.96	1,677,166.87
Point 99	0.00	4,677.19	-996.10	14,542,418.75	1,677,153.91
Point 100	0.00	4,694.54	-1,008.33	14,542,436.08	1,677,141.65
Point 101	0.00	4,712.37	-1,019.83	14,542,453.90	1,677,130.12
Point 102	0.00	4,730.66	-1,030.58	14,542,472.17	1,677,119.35
Point 103	0.00	4,749.40	-1,040.55	14,542,490.90	1,677,109.35
Point 104	0.00	4,768.52	-1,049.74	14,542,510.00	1,677,100.13
Point 105	0.00	4,788.02	-1,058.12	14,542,529.49	1,677,091.72
Point 106	0.00	4,807.84	-1,065.69	14,542,549.30	1,677,084.12
Point 107	0.00	4,827.96	-1,072.43	14,542,569.41	1,677,077.35
Point 108	0.00	4,848.35	-1,078.32	14,542,589.79	1,677,071.43
Point 109	0.00	4,868.95	-1,083.36	14,542,610.38	1,677,066.36
Point 110	0.00	4,889.76	-1,087.54	14,542,631.18	1,677,062.14
Point 111	0.00	4,910.73	-1,090.85	14,542,652.15	1,677,058.80
Point 112	0.00	4,931.80	-1,093.28	14,542,673.22	1,677,056.34
Point 113	0.00	4,952.96	-1,094.83	14,542,694.37	1,677,054.76
Point 114	0.00	4,974.17	-1,095.51	14,542,715.58	1,677,054.05
Point 115	0.00	4,995.39	-1,095.30	14,542,736.80	1,677,054.22
Point 116	0.00	5,016.58	-1,094.21	14,542,757.99	1,677,055.28
Point 117	0.00	5,037.71	-1,092.23	14,542,779.13	1,677,057.23
Point 118	0.00	5,058.73	-1,089.38	14,542,800.15	1,677,060.05
Point 119	0.00	5,079.63	-1,085.66	14,542,821.06	1,677,063.74
Point 120	0.00	5,100.34	-1,081.08	14,542,841.77	1,677,068.29
Point 121	0.00	5,120.85	-1,075.63	14,542,862.29	1,677,073.70
Point 122	0.00	5,141.11	-1,069.34	14,542,882.56	1,677,079.96
Point 123	0.00	5,161.10	-1,062.21	14,542,902.56	1,677,087.06
Point 124	0.00	5,180.77	-1,054.25	14,542,922.24	1,677,094.99
Point 125	0.00	5,200.10	-1,045.48	14,542,941.59	1,677,103.73
Point 126	0.00	5,219.04	-1,035.91	14,542,960.54	1,677,113.28
Point 127	0.00	5,237.57	-1,025.57	14,542,979.09	1,677,123.59
Point 128	0.00	5,255.65	-1,014.46	14,542,997.18	1,677,134.67
Point 129	0.00	5,273.25	-1,002.62	14,543,014.80	1,677,146.48
Point 130	0.00	5,290.34	-990.04	14,543,031.91	1,677,159.04
Point 131	0.00	5,306.90	-976.78	14,543,048.49	1,677,172.27
Point 132	0.00	5,322.89	-962.82	14,543,064.50	1,677,186.21
Point 133	0.00	5,338.29	-948.23	14,543,079.93	1,677,200.78
Point 134	0.00	5,353.07	-933.00	14,543,094.73	1,677,215.98
Point 135	0.00	5,367.20	-917.16	14,543,108.88	1,677,231.80
Point 136	0.00	5,380.66	-900.76	14,543,122.37	1,677,248.18
Point 137	0.00	5,393.42	-883.81	14,543,135.15	1,677,265.11
Point 138	0.00	5,405.48	-866.35	14,543,147.24	1,677,282.55
Point 139	0.00	5,416.79	-848.39	14,543,158.58	1,677,300.50
Point 140	0.00	5,427.34	-829.98	14,543,169.15	1,677,318.89
Point 141	0.00	5,437.12	-811.15	14,543,178.96	1,677,337.71
Point 142	0.00	5,446.11	-791.93	14,543,187.98	1,677,356.91
Point 143	0.00	5,454.29	-772.35	14,543,196.19	1,677,376.48
Point 144	0.00	5,461.65	-752.45	14,543,203.58	1,677,396.37
Point 145	0.00	5,468.17	-732.26	14,543,210.13	1,677,416.55
Point 146	0.00	5,473.86	-711.81	14,543,215.85	1,677,436.99
Point 147	0.00	5,478.68	-691.16	14,543,220.70	1,677,457.63
Point 148	0.00	5,482.64	-670.31	14,543,224.70	1,677,478.48
Point 149	0.00	5,485.74	-649.31	14,543,227.83	1,677,499.47
Point 150	0.00	5,487.95	-628.21	14,543,230.07	1,677,520.57

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 151	0.00	5,489.28	-607.03	14,543,231.43	1,677,541.75		
Point 152	0.00	5,489.73	-585.82	14,543,231.91	1,677,562.96		
PUMA 30N-14HZ_460 R	0.00	0.00	0.00	0.00	14,537,743.09	1,678,157.08	40.030156 -104.865178
- plan hits target center							
- Polygon							
Point 1	0.00	217.73	-582.95	14,537,959.93	1,677,573.81		
Point 2	0.00	217.30	-561.74	14,537,959.54	1,677,595.02		
Point 3	0.00	215.99	-540.55	14,537,958.26	1,677,616.21		
Point 4	0.00	213.80	-519.45	14,537,956.10	1,677,637.31		
Point 5	0.00	210.72	-498.45	14,537,953.05	1,677,658.32		
Point 6	0.00	206.78	-477.60	14,537,949.14	1,677,679.17		
Point 7	0.00	201.98	-456.93	14,537,944.37	1,677,699.85		
Point 8	0.00	196.32	-436.48	14,537,938.75	1,677,720.31		
Point 9	0.00	189.82	-416.28	14,537,932.28	1,677,740.52		
Point 10	0.00	182.48	-396.37	14,537,924.97	1,677,760.44		
Point 11	0.00	174.32	-376.78	14,537,916.84	1,677,780.04		
Point 12	0.00	165.35	-357.56	14,537,907.89	1,677,799.27		
Point 13	0.00	155.59	-338.71	14,537,898.16	1,677,818.14		
Point 14	0.00	145.05	-320.30	14,537,887.65	1,677,836.57		
Point 15	0.00	133.76	-302.33	14,537,876.39	1,677,854.55		
Point 16	0.00	121.73	-284.85	14,537,864.39	1,677,872.05		
Point 17	0.00	108.98	-267.89	14,537,851.66	1,677,889.03		
Point 18	0.00	95.54	-251.47	14,537,838.25	1,677,905.47		
Point 19	0.00	81.43	-235.62	14,537,824.16	1,677,921.34		
Point 20	0.00	66.66	-220.38	14,537,809.41	1,677,936.60		
Point 21	0.00	51.28	-205.76	14,537,794.05	1,677,951.25		
Point 22	0.00	35.31	-191.80	14,537,778.11	1,677,965.23		
Point 23	0.00	18.76	-178.51	14,537,761.58	1,677,978.55		
Point 24	0.00	1.68	-165.92	14,537,744.52	1,677,991.16		
Point 25	0.00	-15.91	-154.05	14,537,726.94	1,678,003.06		
Point 26	0.00	-33.98	-142.93	14,537,708.89	1,678,014.21		
Point 27	0.00	-52.49	-132.57	14,537,690.40	1,678,024.59		
Point 28	0.00	-71.43	-122.99	14,537,671.47	1,678,034.20		
Point 29	0.00	-90.74	-114.19	14,537,652.17	1,678,043.03		
Point 30	0.00	-110.40	-106.21	14,537,632.53	1,678,051.04		
Point 31	0.00	-130.38	-99.06	14,537,612.56	1,678,058.22		
Point 32	0.00	-150.64	-92.75	14,537,592.31	1,678,064.56		
Point 33	0.00	-171.14	-87.29	14,537,571.81	1,678,070.05		
Point 34	0.00	-191.86	-82.67	14,537,551.10	1,678,074.71		
Point 35	0.00	-212.74	-78.93	14,537,530.23	1,678,078.48		
Point 36	0.00	-233.77	-76.06	14,537,509.20	1,678,081.38		
Point 37	0.00	-254.89	-74.06	14,537,488.08	1,678,083.41		
Point 38	0.00	-276.08	-72.95	14,537,466.90	1,678,084.55		
Point 39	0.00	-297.30	-72.72	14,537,445.68	1,678,084.81		
Point 40	0.00	-318.51	-73.37	14,537,424.47	1,678,084.20		
Point 41	0.00	-339.67	-74.90	14,537,403.30	1,678,082.70		
Point 42	0.00	-360.75	-77.31	14,537,382.22	1,678,080.32		
Point 43	0.00	-381.72	-80.59	14,537,361.24	1,678,077.07		
Point 44	0.00	-402.52	-84.76	14,537,340.44	1,678,072.93		
Point 45	0.00	-423.15	-89.77	14,537,319.80	1,678,067.96		
Point 46	0.00	-443.54	-95.64	14,537,299.40	1,678,062.12		
Point 47	0.00	-463.67	-102.36	14,537,279.26	1,678,055.43		
Point 48	0.00	-483.50	-109.90	14,537,259.42	1,678,047.92		
Point 49	0.00	-502.99	-118.27	14,537,239.92	1,678,039.58		
Point 50	0.00	-522.13	-127.44	14,537,220.76	1,678,030.43		
Point 51	0.00	-540.87	-137.40	14,537,202.01	1,678,020.50		
Point 52	0.00	-559.18	-148.11	14,537,183.68	1,678,009.82		
Point 53	0.00	-577.03	-159.60	14,537,165.82	1,677,998.36		
Point 54	0.00	-594.38	-171.81	14,537,148.45	1,677,986.17		
Point 55	0.00	-611.21	-184.73	14,537,131.60	1,677,973.28		
Point 56	0.00	-627.49	-198.35	14,537,115.30	1,677,959.68		
Point 57	0.00	-643.19	-212.62	14,537,099.58	1,677,945.44		
Point 58	0.00	-658.28	-227.54	14,537,084.46	1,677,930.54		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 59	0.00	-672.73	-243.08	14,537,069.99	1,677,915.02
Point 60	0.00	-686.53	-259.20	14,537,056.16	1,677,898.92
Point 61	0.00	-699.64	-275.88	14,537,043.03	1,677,882.26
Point 62	0.00	-712.06	-293.09	14,537,030.58	1,677,865.07
Point 63	0.00	-723.74	-310.80	14,537,018.88	1,677,847.38
Point 64	0.00	-734.67	-328.99	14,537,007.92	1,677,829.21
Point 65	0.00	-744.85	-347.60	14,536,997.71	1,677,810.61
Point 66	0.00	-754.23	-366.64	14,536,988.30	1,677,791.59
Point 67	0.00	-762.82	-386.04	14,536,979.68	1,677,772.20
Point 68	0.00	-770.59	-405.78	14,536,971.88	1,677,752.47
Point 69	0.00	-777.54	-425.83	14,536,964.90	1,677,732.43
Point 70	0.00	-783.64	-446.16	14,536,958.77	1,677,712.11
Point 71	0.00	-788.90	-466.72	14,536,953.48	1,677,691.56
Point 72	0.00	-793.28	-487.48	14,536,949.07	1,677,670.81
Point 73	0.00	-796.81	-508.40	14,536,945.51	1,677,649.89
Point 74	0.00	-799.47	-529.46	14,536,942.82	1,677,628.84
Point 75	0.00	-801.24	-550.60	14,536,941.01	1,677,607.70
Point 76	0.00	-802.18	-572.84	14,536,940.04	1,677,585.46
Point 77	0.00	-802.14	-593.02	14,536,940.05	1,677,565.28
Point 78	0.00	-801.27	-614.22	14,536,940.89	1,677,544.08
Point 79	0.00	-799.52	-635.37	14,536,942.61	1,677,522.93
Point 80	0.00	-796.89	-656.42	14,536,945.20	1,677,501.87
Point 81	0.00	-793.39	-677.36	14,536,948.67	1,677,480.93
Point 82	0.00	-789.02	-698.12	14,536,953.01	1,677,460.16
Point 83	0.00	-783.78	-718.68	14,536,958.22	1,677,439.59
Point 84	0.00	-777.70	-739.02	14,536,964.27	1,677,419.24
Point 85	0.00	-770.77	-759.07	14,536,971.17	1,677,399.18
Point 86	0.00	-763.02	-778.82	14,536,978.89	1,677,379.42
Point 87	0.00	-754.45	-798.24	14,536,987.43	1,677,359.99
Point 88	0.00	-745.10	-817.28	14,536,996.75	1,677,340.93
Point 89	0.00	-734.94	-835.91	14,537,006.88	1,677,322.29
Point 90	0.00	-724.02	-854.10	14,537,017.77	1,677,304.08
Point 91	0.00	-712.36	-871.83	14,537,029.41	1,677,286.33
Point 92	0.00	-699.97	-889.06	14,537,041.77	1,677,269.09
Point 93	0.00	-686.87	-905.75	14,537,054.85	1,677,252.38
Point 94	0.00	-673.09	-921.89	14,537,068.60	1,677,236.21
Point 95	0.00	-658.65	-937.44	14,537,083.02	1,677,220.64
Point 96	0.00	-643.57	-952.37	14,537,098.08	1,677,205.69
Point 97	0.00	-627.89	-966.66	14,537,113.73	1,677,191.38
Point 98	0.00	-611.63	-980.29	14,537,129.97	1,677,177.72
Point 99	0.00	-594.81	-993.23	14,537,146.77	1,677,164.76
Point 100	0.00	-577.47	-1,005.46	14,537,164.10	1,677,152.50
Point 101	0.00	-559.63	-1,016.97	14,537,181.92	1,677,140.96
Point 102	0.00	-541.34	-1,027.71	14,537,200.19	1,677,130.20
Point 103	0.00	-522.61	-1,037.69	14,537,218.91	1,677,120.19
Point 104	0.00	-503.49	-1,046.87	14,537,238.01	1,677,110.98
Point 105	0.00	-483.99	-1,055.26	14,537,257.50	1,677,102.56
Point 106	0.00	-464.17	-1,062.82	14,537,277.31	1,677,094.97
Point 107	0.00	-444.04	-1,069.56	14,537,297.43	1,677,088.20
Point 108	0.00	-423.66	-1,075.45	14,537,317.80	1,677,082.28
Point 109	0.00	-403.05	-1,080.49	14,537,338.40	1,677,077.21
Point 110	0.00	-382.25	-1,084.67	14,537,359.20	1,677,072.99
Point 111	0.00	-361.29	-1,087.98	14,537,380.15	1,677,069.65
Point 112	0.00	-340.21	-1,090.41	14,537,401.23	1,677,067.19
Point 113	0.00	-319.05	-1,091.97	14,537,422.38	1,677,065.60
Point 114	0.00	-297.84	-1,092.64	14,537,443.59	1,677,064.90
Point 115	0.00	-276.62	-1,092.43	14,537,464.81	1,677,065.07
Point 116	0.00	-255.43	-1,091.33	14,537,486.00	1,677,066.14
Point 117	0.00	-234.30	-1,089.36	14,537,507.14	1,677,068.08
Point 118	0.00	-213.27	-1,086.52	14,537,528.17	1,677,070.89
Point 119	0.00	-192.38	-1,082.79	14,537,549.07	1,677,074.59
Point 120	0.00	-171.66	-1,078.21	14,537,569.79	1,677,079.14
Point 121	0.00	-151.16	-1,072.76	14,537,590.30	1,677,084.55
Point 122	0.00	-130.89	-1,066.47	14,537,610.58	1,677,090.81

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 123				0.00	-110.91	-1,059.34	14,537,630.57	1,677,097.91		
Point 124				0.00	-91.23	-1,051.38	14,537,650.27	1,677,105.84		
Point 125				0.00	-71.91	-1,042.61	14,537,669.60	1,677,114.58		
Point 126				0.00	-52.97	-1,033.05	14,537,688.55	1,677,124.12		
Point 127				0.00	-34.44	-1,022.70	14,537,707.10	1,677,134.44		
Point 128				0.00	-16.36	-1,011.59	14,537,725.20	1,677,145.52		
Point 129				0.00	1.24	-999.75	14,537,742.81	1,677,157.33		
Point 130				0.00	18.34	-987.18	14,537,759.93	1,677,169.88		
Point 131				0.00	34.89	-973.91	14,537,776.50	1,677,183.12		
Point 132				0.00	50.89	-959.96	14,537,792.52	1,677,197.05		
Point 133				0.00	66.28	-945.36	14,537,807.94	1,677,211.63		
Point 134				0.00	81.06	-930.13	14,537,822.74	1,677,226.83		
Point 135				0.00	95.19	-914.29	14,537,836.89	1,677,242.65		
Point 136				0.00	108.65	-897.89	14,537,850.38	1,677,259.03		
Point 137				0.00	121.41	-880.94	14,537,863.16	1,677,275.96		
Point 138				0.00	133.47	-863.48	14,537,875.25	1,677,293.40		
Point 139				0.00	144.78	-845.53	14,537,886.59	1,677,311.34		
Point 140				0.00	155.33	-827.11	14,537,897.16	1,677,329.74		
Point 141				0.00	165.11	-808.29	14,537,906.97	1,677,348.55		
Point 142				0.00	174.10	-789.06	14,537,915.99	1,677,367.76		
Point 143				0.00	182.28	-769.48	14,537,924.20	1,677,387.33		
Point 144				0.00	189.64	-749.58	14,537,931.59	1,677,407.22		
Point 145				0.00	196.17	-729.39	14,537,938.15	1,677,427.40		
Point 146				0.00	201.85	-708.95	14,537,943.86	1,677,447.83		
Point 147				0.00	206.67	-688.29	14,537,948.71	1,677,468.48		
Point 148				0.00	210.64	-667.44	14,537,952.72	1,677,489.33		
Point 149				0.00	213.73	-646.44	14,537,955.84	1,677,510.32		
Point 150				0.00	215.95	-625.34	14,537,958.09	1,677,531.42		
Point 151				0.00	217.27	-604.16	14,537,959.44	1,677,552.60		
Point 152				0.00	217.73	-582.95	14,537,959.93	1,677,573.81		
1N-R67W-Sec. 14_Secti	0.00	0.00	0.00	0.36	164.88		14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 164.88usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Polygon										
Point 1			0.00	10,240.97	-771.13		14,547,983.48	1,677,535.33		
Point 2			0.00	10,241.68	1,854.89		14,547,988.17	1,680,161.35		
Point 3			0.00	10,251.55	4,492.80		14,548,002.03	1,682,799.24		
Point 4			0.00	4,901.92	4,512.15		14,542,652.43	1,682,826.69		
Point 5			0.00	4,948.86	1,873.61		14,542,695.38	1,680,188.08		
Point 6			0.00	4,981.70	-753.18		14,542,724.24	1,677,561.24		
Point 7			0.00	7,611.26	-762.09		14,545,353.79	1,677,548.35		
PUMA 30N-14HZ_BHL	0.00	0.00	7,434.00	5,678.45	-301.69		14,543,421.07	1,677,846.80	40.045750	-104.866256
- plan hits target center										
- Point										

Casing Points					
	Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
	1,828.42	1,800.00	9 5/8"	9-5/8	13-1/2
	8,039.23	7,557.00	Top of Production	5-1/2	7-7/8

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA 30N-14HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5007.00usft (D Rig)
Site:	1N-67W-23 Puma 13-23HZ Pad	North Reference:	True
Well:	PUMA 30N-14HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,460.49	1,443.00	Fox Hills		0.00		
4,821.46	4,716.00	Sussex		0.00		
7,403.26	7,276.09	Sharon Springs		0.00		
7,423.98	7,293.09	Niobrara Top		0.00		
13,949.35	7,434.00	Toe:		0.00		
7,673.24	7,461.88	Niobrara B Bench		0.00		
7,877.16	7,539.82	Niobrara C Bench		0.00		
8,039.23	7,557.00	Heel:		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,183.33	1,174.07	-107.91	-35.06	End Nudge @ 1183.33ft	
4,188.33	4,089.81	-799.30	-259.71	Begin Drop @ 4188.33ft	
4,888.33	4,782.86	-880.23	-286.01	End Drop @ 4888.33ft	
7,025.98	6,920.51	-880.23	-286.01	KOP @ 7025.98ft	
7,600.00	7,419.86	-638.52	-286.58	DLS = 9°/100'	
8,039.23	7,557.00	-230.37	-287.56	End Build @ 8039.23ft	
13,949.35	7,434.00	5,678.45	-301.69	TD Well @ 13949.35ft	