

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-67W-23 Puma 13-23HZ Pad
PUMA FED 34C-35HZ**

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 FED 34C-35HZ

Wellbore: Plan A

Design: Permit Rev-1

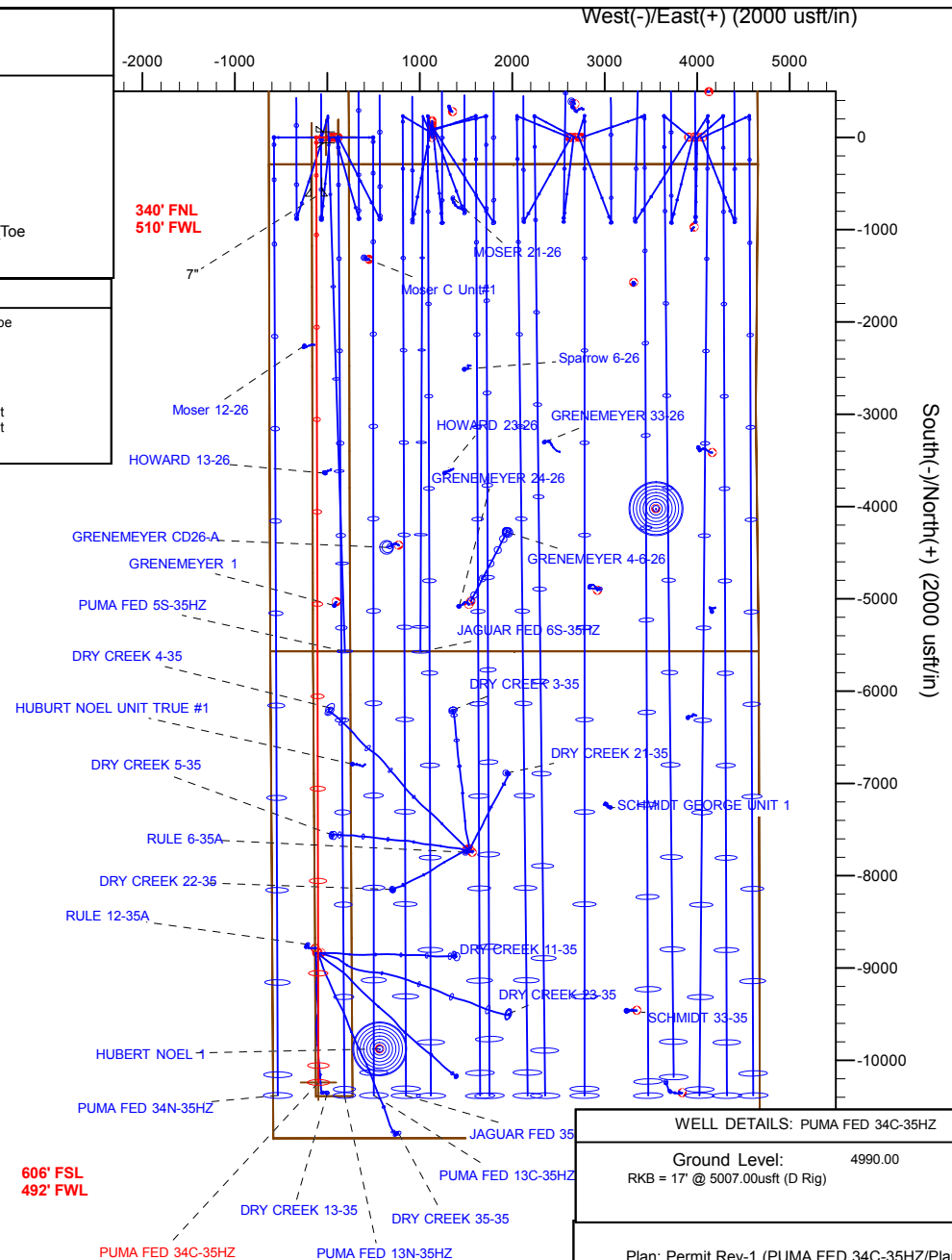
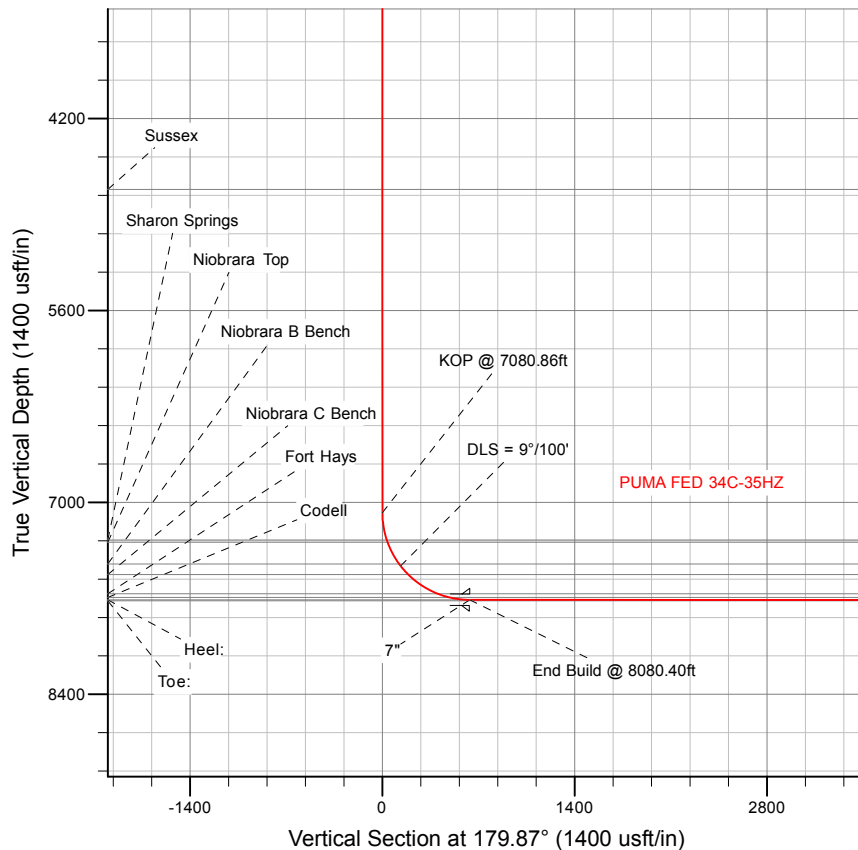
US ROCKIES WATTENBERG PLANNING

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	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	993.33	7.40	270.00	991.96	0.00	-31.81	1.50	270.00	-0.07	
4	1483.33	7.40	270.00	1477.88	0.00	-94.92	0.00	0.00	-0.22	
5	1853.33	0.00	0.00	1846.85	0.00	-118.78	2.00	180.00	-0.27	
6	7080.86	0.00	0.00	7074.38	0.00	-118.78	0.00	0.00	-0.27	
7	8080.40	89.96	179.87	7711.00	-636.15	-117.30	9.00	179.87	635.89	
8	17683.14	89.96	179.87	7718.00	-10238.87	-94.94	0.00	0.00	10238.63	PUMA FED 34C-35HZ_Toe

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PUMA FED 34C-35HZ_SHL	0.00	0.00	0.00	40.030157	-104.865017	Point
PUMA FED 34C-35HZ_Toe	7718.00	-10238.87	-94.94	40.002039	-104.865356	Point



WELL DETAILS: PUMA FED 34C-35HZ

Ground Level: 4990.00
RKB = 17" @ 5007.00usft (D Rig)

Plan: Permit Rev-1 (PUMA FED 34C-35HZ/Plan A)

Created By: Clint Eshelman Date: 7/30/2015
Reviewed: _____ Date: _____

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34C-35HZ
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 FED 34C-35HZ	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 FED 34C-35HZ					
Well Position	+N/-S	0.36 usft	Northing:	14,537,743.52 usft	Latitude:	40.030157
	+E/-W	59.90 usft	Easting:	1,678,202.15 usft	Longitude:	-104.865017
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	179.87

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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
993.33	7.40	270.00	991.96	0.00	-31.81	1.50	1.50	0.00	270.00	
1,483.33	7.40	270.00	1,477.88	0.00	-94.92	0.00	0.00	0.00	0.00	
1,853.33	0.00	0.00	1,846.85	0.00	-118.78	2.00	-2.00	0.00	180.00	
7,080.86	0.00	0.00	7,074.38	0.00	-118.78	0.00	0.00	0.00	0.00	
8,080.40	89.96	179.87	7,711.00	-636.15	-117.30	9.00	9.00	18.00	179.87	
17,683.14	89.96	179.87	7,718.00	-10,238.87	-94.94	0.00	0.00	0.00	0.00	PUMA FED 34C-35HZ

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34C-35HZ
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 FED 34C-35HZ	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
1N-R67W-Sec. 14_Section lines - 1N-R67W-Sec. 35_Section lines - PUMA FED 34C-35HZ_Drilling Window - PUMA FED 34C-35HZ_SHL - 1									
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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 500.00ft									
600.00	1.50	270.00	599.99	0.00	-1.31	0.00	1.50	1.50	0.00
700.00	3.00	270.00	699.91	0.00	-5.23	-0.01	1.50	1.50	0.00
800.00	4.50	270.00	799.69	0.00	-11.77	-0.03	1.50	1.50	0.00
900.00	6.00	270.00	899.27	0.00	-20.92	-0.05	1.50	1.50	0.00
993.33	7.40	270.00	991.96	0.00	-31.81	-0.07	1.50	1.50	0.00
End Nudge @ 993.33ft									
1,000.00	7.40	270.00	998.57	0.00	-32.67	-0.07	0.00	0.00	0.00
1,100.00	7.40	270.00	1,097.74	0.00	-45.55	-0.10	0.00	0.00	0.00
1,200.00	7.40	270.00	1,196.91	0.00	-58.43	-0.13	0.00	0.00	0.00
1,300.00	7.40	270.00	1,296.08	0.00	-71.31	-0.16	0.00	0.00	0.00
1,400.00	7.40	270.00	1,395.24	0.00	-84.19	-0.19	0.00	0.00	0.00
1,448.16	7.40	270.00	1,443.00	0.00	-90.39	-0.21	0.00	0.00	0.00
Fox Hills									
1,483.33	7.40	270.00	1,477.88	0.00	-94.92	-0.22	0.00	0.00	0.00
Begin Drop @ 1483.33ft									
1,500.00	7.07	270.00	1,494.42	0.00	-97.02	-0.22	2.00	-2.00	0.00
1,600.00	5.07	270.00	1,593.85	0.00	-107.59	-0.24	2.00	-2.00	0.00
1,700.00	3.07	270.00	1,693.59	0.00	-114.68	-0.26	2.00	-2.00	0.00
1,800.00	1.07	270.00	1,793.52	0.00	-118.29	-0.27	2.00	-2.00	0.00
1,806.48	0.94	270.00	1,800.00	0.00	-118.40	-0.27	2.00	-2.00	0.00
9 5/8"									
1,853.33	0.00	270.00	1,846.85	0.00	-118.78	-0.27	2.00	-2.00	0.00
End Drop @ 1853.33ft									
1,900.00	0.00	0.00	1,893.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,000.00	0.00	0.00	1,993.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,100.00	0.00	0.00	2,093.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,200.00	0.00	0.00	2,193.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,300.00	0.00	0.00	2,293.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,400.00	0.00	0.00	2,393.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,500.00	0.00	0.00	2,493.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,600.00	0.00	0.00	2,593.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,700.00	0.00	0.00	2,693.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,800.00	0.00	0.00	2,793.52	0.00	-118.78	-0.27	0.00	0.00	0.00
2,900.00	0.00	0.00	2,893.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,000.00	0.00	0.00	2,993.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,100.00	0.00	0.00	3,093.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,200.00	0.00	0.00	3,193.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,300.00	0.00	0.00	3,293.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,400.00	0.00	0.00	3,393.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,500.00	0.00	0.00	3,493.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,600.00	0.00	0.00	3,593.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,700.00	0.00	0.00	3,693.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,800.00	0.00	0.00	3,793.52	0.00	-118.78	-0.27	0.00	0.00	0.00
3,900.00	0.00	0.00	3,893.52	0.00	-118.78	-0.27	0.00	0.00	0.00
4,000.00	0.00	0.00	3,993.52	0.00	-118.78	-0.27	0.00	0.00	0.00

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Planning Report

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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 FED 34C-35HZ	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)
4,100.00	0.00	0.00	4,093.52	0.00	-118.78	-0.27	0.00	0.00	0.00
4,200.00	0.00	0.00	4,193.52	0.00	-118.78	-0.27	0.00	0.00	0.00
4,300.00	0.00	0.00	4,293.52	0.00	-118.78	-0.27	0.00	0.00	0.00
4,400.00	0.00	0.00	4,393.52	0.00	-118.78	-0.27	0.00	0.00	0.00
4,500.00	0.00	0.00	4,493.52	0.00	-118.78	-0.27	0.00	0.00	0.00
4,600.00	0.00	0.00	4,593.52	0.00	-118.78	-0.27	0.00	0.00	0.00
4,700.00	0.00	0.00	4,693.52	0.00	-118.78	-0.27	0.00	0.00	0.00
4,722.48	0.00	0.00	4,716.00	0.00	-118.78	-0.27	0.00	0.00	0.00
Sussex									
4,800.00	0.00	0.00	4,793.52	0.00	-118.78	-0.27	0.00	0.00	0.00
4,900.00	0.00	0.00	4,893.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,000.00	0.00	0.00	4,993.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,100.00	0.00	0.00	5,093.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,200.00	0.00	0.00	5,193.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,300.00	0.00	0.00	5,293.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,400.00	0.00	0.00	5,393.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,500.00	0.00	0.00	5,493.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,600.00	0.00	0.00	5,593.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,700.00	0.00	0.00	5,693.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,800.00	0.00	0.00	5,793.52	0.00	-118.78	-0.27	0.00	0.00	0.00
5,900.00	0.00	0.00	5,893.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,000.00	0.00	0.00	5,993.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,100.00	0.00	0.00	6,093.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,200.00	0.00	0.00	6,193.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,300.00	0.00	0.00	6,293.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,400.00	0.00	0.00	6,393.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,500.00	0.00	0.00	6,493.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,600.00	0.00	0.00	6,593.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,700.00	0.00	0.00	6,693.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,800.00	0.00	0.00	6,793.52	0.00	-118.78	-0.27	0.00	0.00	0.00
6,900.00	0.00	0.00	6,893.52	0.00	-118.78	-0.27	0.00	0.00	0.00
7,000.00	0.00	0.00	6,993.52	0.00	-118.78	-0.27	0.00	0.00	0.00
7,080.86	0.00	0.00	7,074.38	0.00	-118.78	-0.27	0.00	0.00	0.00
KOP @ 7080.86ft									
7,100.00	1.72	179.87	7,093.52	-0.29	-118.78	0.02	9.00	9.00	0.00
7,200.00	10.72	179.87	7,192.83	-11.12	-118.76	10.85	9.00	9.00	0.00
7,284.63	18.34	179.87	7,274.69	-32.33	-118.71	32.06	9.00	9.00	0.00
Sharon Springs									
7,300.00	19.72	179.87	7,289.22	-37.34	-118.70	37.08	9.00	9.00	0.00
7,302.63	19.96	179.87	7,291.69	-38.24	-118.69	37.97	9.00	9.00	0.00
Niobrara Top									
7,400.00	28.72	179.87	7,380.32	-78.33	-118.60	78.06	9.00	9.00	0.00
7,482.07	36.11	179.87	7,449.56	-122.30	-118.50	122.03	9.00	9.00	0.00
Niobrara B Bench									
7,500.00	37.72	179.87	7,463.89	-133.06	-118.47	132.79	9.00	9.00	0.00
DLS = 9°/100'									
7,584.60	45.34	179.87	7,527.18	-189.11	-118.34	188.84	9.00	9.00	0.00
Niobrara C Bench									
7,600.00	46.72	179.87	7,537.87	-200.19	-118.32	199.93	9.00	9.00	0.00
7,700.00	55.72	179.87	7,600.43	-278.07	-118.14	277.80	9.00	9.00	0.00
7,800.00	64.72	179.87	7,650.05	-364.78	-117.93	364.51	9.00	9.00	0.00
7,840.54	68.37	179.87	7,666.18	-401.96	-117.85	401.69	9.00	9.00	0.00
Fort Hays									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34C-35HZ
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 FED 34C-35HZ	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)
7,900.00	73.72	179.87	7,685.48	-458.18	-117.72	457.91	9.00	9.00	0.00
7,927.88	76.23	179.87	7,692.71	-485.11	-117.65	484.84	9.00	9.00	0.00
Codell									
8,000.00	82.72	179.87	7,705.88	-555.97	-117.49	555.70	9.00	9.00	0.00
8,080.40	89.96	179.87	7,711.00	-636.15	-117.30	635.89	9.00	9.00	0.00
End Build @ 8080.40ft - Heel: - 7"									
8,100.00	89.96	179.87	7,711.02	-655.75	-117.26	655.49	0.00	0.00	0.00
8,200.00	89.96	179.87	7,711.09	-755.75	-117.02	755.49	0.00	0.00	0.00
8,300.00	89.96	179.87	7,711.16	-855.75	-116.79	855.49	0.00	0.00	0.00
8,400.00	89.96	179.87	7,711.24	-955.75	-116.56	955.49	0.00	0.00	0.00
8,500.00	89.96	179.87	7,711.31	-1,055.75	-116.33	1,055.49	0.00	0.00	0.00
8,600.00	89.96	179.87	7,711.38	-1,155.75	-116.09	1,155.49	0.00	0.00	0.00
8,700.00	89.96	179.87	7,711.46	-1,255.75	-115.86	1,255.49	0.00	0.00	0.00
8,800.00	89.96	179.87	7,711.53	-1,355.75	-115.63	1,355.49	0.00	0.00	0.00
8,900.00	89.96	179.87	7,711.60	-1,455.75	-115.39	1,455.49	0.00	0.00	0.00
9,000.00	89.96	179.87	7,711.67	-1,555.75	-115.16	1,555.49	0.00	0.00	0.00
9,100.00	89.96	179.87	7,711.75	-1,655.75	-114.93	1,655.49	0.00	0.00	0.00
9,200.00	89.96	179.87	7,711.82	-1,755.75	-114.70	1,755.49	0.00	0.00	0.00
9,300.00	89.96	179.87	7,711.89	-1,855.75	-114.46	1,855.49	0.00	0.00	0.00
9,400.00	89.96	179.87	7,711.97	-1,955.75	-114.23	1,955.49	0.00	0.00	0.00
9,500.00	89.96	179.87	7,712.04	-2,055.75	-114.00	2,055.49	0.00	0.00	0.00
9,600.00	89.96	179.87	7,712.11	-2,155.75	-113.76	2,155.49	0.00	0.00	0.00
9,700.00	89.96	179.87	7,712.18	-2,255.75	-113.53	2,255.49	0.00	0.00	0.00
9,800.00	89.96	179.87	7,712.26	-2,355.75	-113.30	2,355.49	0.00	0.00	0.00
9,900.00	89.96	179.87	7,712.33	-2,455.75	-113.07	2,455.49	0.00	0.00	0.00
10,000.00	89.96	179.87	7,712.40	-2,555.75	-112.83	2,555.49	0.00	0.00	0.00
10,100.00	89.96	179.87	7,712.48	-2,655.75	-112.60	2,655.49	0.00	0.00	0.00
10,200.00	89.96	179.87	7,712.55	-2,755.75	-112.37	2,755.49	0.00	0.00	0.00
10,300.00	89.96	179.87	7,712.62	-2,855.75	-112.13	2,855.49	0.00	0.00	0.00
10,400.00	89.96	179.87	7,712.69	-2,955.75	-111.90	2,955.49	0.00	0.00	0.00
10,500.00	89.96	179.87	7,712.77	-3,055.75	-111.67	3,055.49	0.00	0.00	0.00
10,600.00	89.96	179.87	7,712.84	-3,155.75	-111.44	3,155.49	0.00	0.00	0.00
10,700.00	89.96	179.87	7,712.91	-3,255.75	-111.20	3,255.49	0.00	0.00	0.00
10,800.00	89.96	179.87	7,712.99	-3,355.75	-110.97	3,355.49	0.00	0.00	0.00
10,900.00	89.96	179.87	7,713.06	-3,455.75	-110.74	3,455.49	0.00	0.00	0.00
11,000.00	89.96	179.87	7,713.13	-3,555.75	-110.50	3,555.49	0.00	0.00	0.00
11,100.00	89.96	179.87	7,713.20	-3,655.75	-110.27	3,655.49	0.00	0.00	0.00
11,200.00	89.96	179.87	7,713.28	-3,755.75	-110.04	3,755.49	0.00	0.00	0.00
11,300.00	89.96	179.87	7,713.35	-3,855.75	-109.81	3,855.49	0.00	0.00	0.00
11,400.00	89.96	179.87	7,713.42	-3,955.74	-109.57	3,955.49	0.00	0.00	0.00
11,500.00	89.96	179.87	7,713.50	-4,055.74	-109.34	4,055.49	0.00	0.00	0.00
11,600.00	89.96	179.87	7,713.57	-4,155.74	-109.11	4,155.49	0.00	0.00	0.00
11,700.00	89.96	179.87	7,713.64	-4,255.74	-108.87	4,255.49	0.00	0.00	0.00
11,800.00	89.96	179.87	7,713.71	-4,355.74	-108.64	4,355.49	0.00	0.00	0.00
11,900.00	89.96	179.87	7,713.79	-4,455.74	-108.41	4,455.49	0.00	0.00	0.00
12,000.00	89.96	179.87	7,713.86	-4,555.74	-108.18	4,555.49	0.00	0.00	0.00
12,100.00	89.96	179.87	7,713.93	-4,655.74	-107.94	4,655.49	0.00	0.00	0.00
12,200.00	89.96	179.87	7,714.01	-4,755.74	-107.71	4,755.49	0.00	0.00	0.00
12,300.00	89.96	179.87	7,714.08	-4,855.74	-107.48	4,855.49	0.00	0.00	0.00
12,400.00	89.96	179.87	7,714.15	-4,955.74	-107.24	4,955.49	0.00	0.00	0.00
12,500.00	89.96	179.87	7,714.22	-5,055.74	-107.01	5,055.49	0.00	0.00	0.00
12,600.00	89.96	179.87	7,714.30	-5,155.74	-106.78	5,155.49	0.00	0.00	0.00
12,700.00	89.96	179.87	7,714.37	-5,255.74	-106.55	5,255.49	0.00	0.00	0.00
12,800.00	89.96	179.87	7,714.44	-5,355.74	-106.31	5,355.49	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34C-35HZ
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 FED 34C-35HZ	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)
12,900.00	89.96	179.87	7,714.52	-5,455.74	-106.08	5,455.49	0.00	0.00	0.00
13,000.00	89.96	179.87	7,714.59	-5,555.74	-105.85	5,555.49	0.00	0.00	0.00
13,100.00	89.96	179.87	7,714.66	-5,655.74	-105.61	5,655.49	0.00	0.00	0.00
13,200.00	89.96	179.87	7,714.73	-5,755.74	-105.38	5,755.49	0.00	0.00	0.00
13,300.00	89.96	179.87	7,714.81	-5,855.74	-105.15	5,855.49	0.00	0.00	0.00
13,400.00	89.96	179.87	7,714.88	-5,955.74	-104.92	5,955.49	0.00	0.00	0.00
13,500.00	89.96	179.87	7,714.95	-6,055.74	-104.68	6,055.49	0.00	0.00	0.00
13,600.00	89.96	179.87	7,715.03	-6,155.74	-104.45	6,155.49	0.00	0.00	0.00
13,700.00	89.96	179.87	7,715.10	-6,255.74	-104.22	6,255.49	0.00	0.00	0.00
13,800.00	89.96	179.87	7,715.17	-6,355.74	-103.98	6,355.49	0.00	0.00	0.00
13,900.00	89.96	179.87	7,715.24	-6,455.74	-103.75	6,455.49	0.00	0.00	0.00
14,000.00	89.96	179.87	7,715.32	-6,555.74	-103.52	6,555.49	0.00	0.00	0.00
14,100.00	89.96	179.87	7,715.39	-6,655.74	-103.29	6,655.49	0.00	0.00	0.00
14,200.00	89.96	179.87	7,715.46	-6,755.74	-103.05	6,755.49	0.00	0.00	0.00
14,300.00	89.96	179.87	7,715.54	-6,855.74	-102.82	6,855.49	0.00	0.00	0.00
14,400.00	89.96	179.87	7,715.61	-6,955.74	-102.59	6,955.49	0.00	0.00	0.00
14,500.00	89.96	179.87	7,715.68	-7,055.74	-102.35	7,055.49	0.00	0.00	0.00
14,600.00	89.96	179.87	7,715.75	-7,155.74	-102.12	7,155.49	0.00	0.00	0.00
14,700.00	89.96	179.87	7,715.83	-7,255.74	-101.89	7,255.49	0.00	0.00	0.00
14,800.00	89.96	179.87	7,715.90	-7,355.73	-101.66	7,355.49	0.00	0.00	0.00
14,900.00	89.96	179.87	7,715.97	-7,455.73	-101.42	7,455.49	0.00	0.00	0.00
15,000.00	89.96	179.87	7,716.05	-7,555.73	-101.19	7,555.49	0.00	0.00	0.00
15,100.00	89.96	179.87	7,716.12	-7,655.73	-100.96	7,655.49	0.00	0.00	0.00
15,200.00	89.96	179.87	7,716.19	-7,755.73	-100.72	7,755.49	0.00	0.00	0.00
15,300.00	89.96	179.87	7,716.26	-7,855.73	-100.49	7,855.49	0.00	0.00	0.00
15,400.00	89.96	179.87	7,716.34	-7,955.73	-100.26	7,955.49	0.00	0.00	0.00
15,500.00	89.96	179.87	7,716.41	-8,055.73	-100.03	8,055.49	0.00	0.00	0.00
15,600.00	89.96	179.87	7,716.48	-8,155.73	-99.79	8,155.49	0.00	0.00	0.00
15,700.00	89.96	179.87	7,716.56	-8,255.73	-99.56	8,255.49	0.00	0.00	0.00
15,800.00	89.96	179.87	7,716.63	-8,355.73	-99.33	8,355.49	0.00	0.00	0.00
15,900.00	89.96	179.87	7,716.70	-8,455.73	-99.09	8,455.49	0.00	0.00	0.00
16,000.00	89.96	179.87	7,716.77	-8,555.73	-98.86	8,555.49	0.00	0.00	0.00
16,100.00	89.96	179.87	7,716.85	-8,655.73	-98.63	8,655.48	0.00	0.00	0.00
16,200.00	89.96	179.87	7,716.92	-8,755.73	-98.40	8,755.48	0.00	0.00	0.00
16,300.00	89.96	179.87	7,716.99	-8,855.73	-98.16	8,855.48	0.00	0.00	0.00
16,400.00	89.96	179.87	7,717.07	-8,955.73	-97.93	8,955.48	0.00	0.00	0.00
16,500.00	89.96	179.87	7,717.14	-9,055.73	-97.70	9,055.48	0.00	0.00	0.00
16,600.00	89.96	179.87	7,717.21	-9,155.73	-97.46	9,155.48	0.00	0.00	0.00
16,700.00	89.96	179.87	7,717.28	-9,255.73	-97.23	9,255.48	0.00	0.00	0.00
16,800.00	89.96	179.87	7,717.36	-9,355.73	-97.00	9,355.48	0.00	0.00	0.00
16,900.00	89.96	179.87	7,717.43	-9,455.73	-96.77	9,455.48	0.00	0.00	0.00
17,000.00	89.96	179.87	7,717.50	-9,555.73	-96.53	9,555.48	0.00	0.00	0.00
17,100.00	89.96	179.87	7,717.58	-9,655.73	-96.30	9,655.48	0.00	0.00	0.00
17,200.00	89.96	179.87	7,717.65	-9,755.73	-96.07	9,755.48	0.00	0.00	0.00
17,300.00	89.96	179.87	7,717.72	-9,855.73	-95.83	9,855.48	0.00	0.00	0.00
17,400.00	89.96	179.87	7,717.79	-9,955.73	-95.60	9,955.48	0.00	0.00	0.00
17,500.00	89.96	179.87	7,717.87	-10,055.73	-95.37	10,055.48	0.00	0.00	0.00
17,600.00	89.96	179.87	7,717.94	-10,155.73	-95.14	10,155.48	0.00	0.00	0.00
17,683.14	89.96	179.87	7,718.00	-10,238.87	-94.94	10,238.62	0.00	0.00	0.00
TD Well @ 17683.14ft - Toe: - PUMA FED 34C-35HZ_Toe									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34C-35HZ
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 FED 34C-35HZ	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	0.00	119.81	14,537,743.70	1,678,321.96	40.030157	-104.864589
- plan misses target center by 119.81usft 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	1,677,592.71		
Point 2			0.00	-5,567.35	1,905.22	14,532,179.24	1,680,235.62		
Point 3			0.00	-5,567.85	4,548.01	14,532,182.75	1,682,878.40		
Point 4			0.00	-10,841.76	4,559.90	14,526,908.86	1,682,898.29		
Point 5			0.00	-10,843.80	1,928.43	14,526,902.84	1,680,266.82		
Point 6			0.00	-10,844.86	-702.65	14,526,897.79	1,677,635.75		
Point 7			0.00	-8,206.73	-719.46	14,529,535.89	1,677,614.94		
PUMA FED 34C-35HZ_I	0.00	0.00	0.00	0.00	-15.12	14,537,743.50	1,678,187.04	40.030157	-104.865071
- plan misses target center by 15.12usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	565.51	-154.05	14,538,308.77	1,678,032.13		
Point 2			0.00	564.57	246.19	14,538,308.44	1,678,432.37		
Point 3			0.00	168.53	247.32	14,537,912.40	1,678,434.10		
Point 4			0.00	-291.46	248.64	14,537,452.41	1,678,436.12		
Point 5			0.00	-751.46	249.65	14,536,992.42	1,678,437.82		
Point 6			0.00	-1,151.98	250.53	14,536,591.90	1,678,439.31		
Point 7			0.00	-1,611.98	251.54	14,536,131.90	1,678,441.02		
Point 8			0.00	-2,071.99	252.55	14,535,671.89	1,678,442.73		
Point 9			0.00	-2,472.51	253.44	14,535,271.37	1,678,444.22		
Point 10			0.00	-2,932.50	254.45	14,534,811.38	1,678,445.93		
Point 11			0.00	-3,392.50	255.47	14,534,351.39	1,678,447.65		
Point 12			0.00	-3,790.95	256.36	14,533,952.94	1,678,449.14		
Point 13			0.00	-4,250.95	257.38	14,533,492.94	1,678,450.86		
Point 14			0.00	-4,710.95	258.88	14,533,032.94	1,678,453.05		
Point 15			0.00	-5,110.13	260.17	14,532,633.77	1,678,454.95		
Point 16			0.00	-5,570.12	261.66	14,532,173.78	1,678,457.14		
Point 17			0.00	-6,030.13	264.25	14,531,713.77	1,678,460.42		
Point 18			0.00	-6,429.62	266.50	14,531,314.29	1,678,463.28		
Point 19			0.00	-6,889.63	269.10	14,530,854.28	1,678,466.58		
Point 20			0.00	-7,349.63	271.69	14,530,394.29	1,678,469.86		
Point 21			0.00	-7,749.12	273.93	14,529,994.80	1,678,472.71		
Point 22			0.00	-8,209.13	276.53	14,529,534.79	1,678,476.01		
Point 23			0.00	-8,669.12	279.02	14,529,074.81	1,678,479.19		
Point 24			0.00	-9,067.71	281.18	14,528,676.22	1,678,481.96		
Point 25			0.00	-9,527.70	283.67	14,528,216.24	1,678,485.14		
Point 26			0.00	-9,987.71	286.16	14,527,756.23	1,678,488.33		
Point 27			0.00	-10,386.74	288.32	14,527,357.20	1,678,491.10		
Point 28			0.00	-10,386.91	-107.70	14,527,356.43	1,678,095.08		
Point 29			0.00	-9,987.92	-110.27	14,527,755.42	1,678,091.90		
Point 30			0.00	-9,527.92	-113.22	14,528,215.41	1,678,088.25		
Point 31			0.00	-9,067.92	-116.17	14,528,675.41	1,678,084.61		
Point 32			0.00	-8,669.12	-118.73	14,529,074.21	1,678,081.44		
Point 33			0.00	-8,209.13	-121.68	14,529,534.19	1,678,077.80		
Point 34			0.00	-7,749.12	-124.81	14,529,994.20	1,678,073.97		
Point 35			0.00	-7,349.68	-127.52	14,530,393.63	1,678,070.65		
Point 36			0.00	-6,889.67	-130.66	14,530,853.64	1,678,066.82		
Point 37			0.00	-6,429.68	-133.78	14,531,313.62	1,678,063.00		
Point 38			0.00	-6,030.23	-136.49	14,531,713.07	1,678,059.68		
Point 39			0.00	-5,570.23	-139.62	14,532,173.06	1,678,055.86		
Point 40			0.00	-5,110.23	-140.76	14,532,633.06	1,678,054.02		
Point 41			0.00	-4,711.06	-141.74	14,533,032.23	1,678,052.44		
Point 42			0.00	-4,251.06	-142.87	14,533,492.22	1,678,050.61		
Point 43			0.00	-3,791.07	-144.02	14,533,952.21	1,678,048.76		
Point 44			0.00	-3,392.29	-145.02	14,534,350.99	1,678,047.16		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34C-35HZ
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 FED 34C-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Point 45	0.00	-2,932.28	-146.17	14,534,811.00	1,678,045.31		
Point 46	0.00	-2,472.28	-147.29	14,535,271.00	1,678,043.49		
Point 47	0.00	-2,072.13	-148.28	14,535,671.14	1,678,041.90		
Point 48	0.00	-1,612.14	-149.40	14,536,131.13	1,678,040.08		
Point 49	0.00	-1,170.17	-150.34	14,536,573.10	1,678,038.47		
Point 50	0.00	-751.98	-151.51	14,536,991.29	1,678,036.67		
Point 51	0.00	-270.99	-152.27	14,537,472.28	1,678,035.18		
Point 52	0.00	-291.98	-152.63	14,537,451.28	1,678,034.85		
Point 53	0.00	154.25	-153.38	14,537,897.51	1,678,033.42		
Point 54	0.00	565.51	-154.05	14,538,308.77	1,678,032.13		
PUMA FED 34C-35HZ_5	0.00	0.00	0.00	0.00	-15.12	14,537,743.50	1,678,187.04
- plan misses target center by 15.12usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)							
- Point							
1N-R67W-Sec. 23_Secti	0.00	0.00	0.00	0.00	119.81	14,537,743.70	1,678,321.96
- plan misses target center by 119.81usft 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	1,677,561.23		
Point 2	0.00	4,948.86	1,873.61	14,542,695.38	1,680,188.07		
Point 3	0.00	4,901.92	4,512.15	14,542,652.44	1,682,826.68		
Point 4	0.00	-288.13	4,540.16	14,537,462.45	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	14,537,452.26	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	0.00	119.81	14,537,743.70	1,678,321.96
- plan misses target center by 119.81usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)							
- Polygon							
Point 1	0.00	-290.30	-750.41	14,537,452.26	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	14,537,462.45	1,682,862.55		
Point 4	0.00	-2,913.10	4,515.39	14,534,837.45	1,682,841.76		
Point 5	0.00	-5,567.85	4,548.01	14,532,182.75	1,682,878.40		
Point 6	0.00	-5,567.35	1,905.22	14,532,179.24	1,680,235.62		
Point 7	0.00	-5,567.60	-737.69	14,532,174.99	1,677,592.71		
Point 8	0.00	-2,929.65	-743.92	14,534,812.93	1,677,582.48		
1N-R67W-Sec. 14_Secti	0.00	0.00	0.00	0.00	119.81	14,537,743.70	1,678,321.96
- plan misses target center by 119.81usft 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	1,677,535.31		
Point 2	0.00	10,241.68	1,854.89	14,547,988.17	1,680,161.33		
Point 3	0.00	10,251.55	4,492.80	14,548,002.04	1,682,799.22		
Point 4	0.00	4,901.92	4,512.15	14,542,652.44	1,682,826.68		
Point 5	0.00	4,948.86	1,873.61	14,542,695.38	1,680,188.07		
Point 6	0.00	4,981.70	-753.18	14,542,724.24	1,677,561.23		
Point 7	0.00	7,611.26	-762.09	14,545,353.79	1,677,548.34		
PUMA FED 34C-35HZ_7	0.00	0.00	7,718.00	-10,238.87	-94.94	14,527,504.52	1,678,122.73
- plan hits target center							
- Point							

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,806.48	1,800.00	9 5/8"	9-5/8	13-1/2	
8,080.40	7,711.00	7"	7	8-3/4	

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well PUMA FED 34C-35HZ
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 FED 34C-35HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,448.16	1,443.00	Fox Hills		0.00		
4,722.48	4,716.00	Sussex		0.00		
7,284.63	7,274.69	Sharon Springs		0.00		
7,302.63	7,291.69	Niobrara Top		0.00		
7,482.07	7,449.56	Niobrara B Bench		0.00		
7,584.60	7,527.18	Niobrara C Bench		0.00		
7,840.54	7,666.18	Fort Hays		0.00		
7,927.88	7,692.71	Codell		0.00		
8,080.40	7,711.00	Heel:		0.00		
17,683.14	7,718.00	Toe:		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
500.00	500.00	0.00	0.00	Begin Nudge @ 500.00ft	
993.33	991.96	0.00	-31.81	End Nudge @ 993.33ft	
1,483.33	1,477.88	0.00	-94.92	Begin Drop @ 1483.33ft	
1,853.33	1,846.85	0.00	-118.78	End Drop @ 1853.33ft	
7,080.86	7,074.38	0.00	-118.78	KOP @ 7080.86ft	
7,500.00	7,463.89	-133.06	-118.47	DLS = 9°/100'	
8,080.40	7,711.00	-636.15	-117.30	End Build @ 8080.40ft	
17,683.14	7,718.00	-10,238.87	-94.94	TD Well @ 17683.14ft	