

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
5N-68W-13 Folley 16-13HZ Pad
Folley South #3**

Plan A

Plan: Permit Rev-4

Standard Planning Report

07 July, 2016

Project: WELD-NAD83-UTMFT13N
Site: 5N-68W-13 Folley 16-13HZ Pad
Well: Folley South #3
Wellbore: Plan A
Design: Permit Rev-4

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
6865.17	7444.37	5-1/2
1800.00	1826.50	9-5/8

WELL DETAILS: Folley South #3

Ground Level: 4887.00

RKB @ 4904.00usft (D Rig)

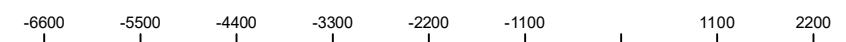
SECTION DETAILS

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	1833.33	20.00	162.00	1806.42	-219.08	71.18	1.50	162.00	-74.50	
4	5110.33	20.00	162.00	4885.79	-1285.03	417.53	0.00	0.00	-436.99	
5	6443.67	0.00	0.00	6192.21	-1504.11	488.71	1.50	-180.00	-511.50	
6	6543.67	0.00	0.00	6292.21	-1504.11	488.71	0.00	0.00	-511.50	
7	7444.37	90.07	270.87	6865.17	-1495.43	-84.88	10.00	270.87	62.16	
8	15786.94	90.07	270.87	6855.00	-1369.28	-8426.49	0.00	0.00	8404.72	FOLLEY SOUTH #3_BHL

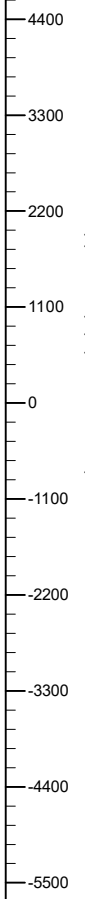
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
FOLLEY SOUTH #3_SHL	0.00	0.00	0.00	40.393801	-104.946832	Point
FOLLEY SOUTH #3_BHL	6855.00	-1369.28	-8426.49	40.390037	-104.977094	Point

West(-)/East(+) (2200 usft/in)



South(-)/North(+) (2200 usft/in)



BHL
942' FNL
1784' FWL
Section 23
NNW

Folley South #1

FOLLEY SOUTH #3_BHL

Folley South #3

Section 13

CALKINS 24-11

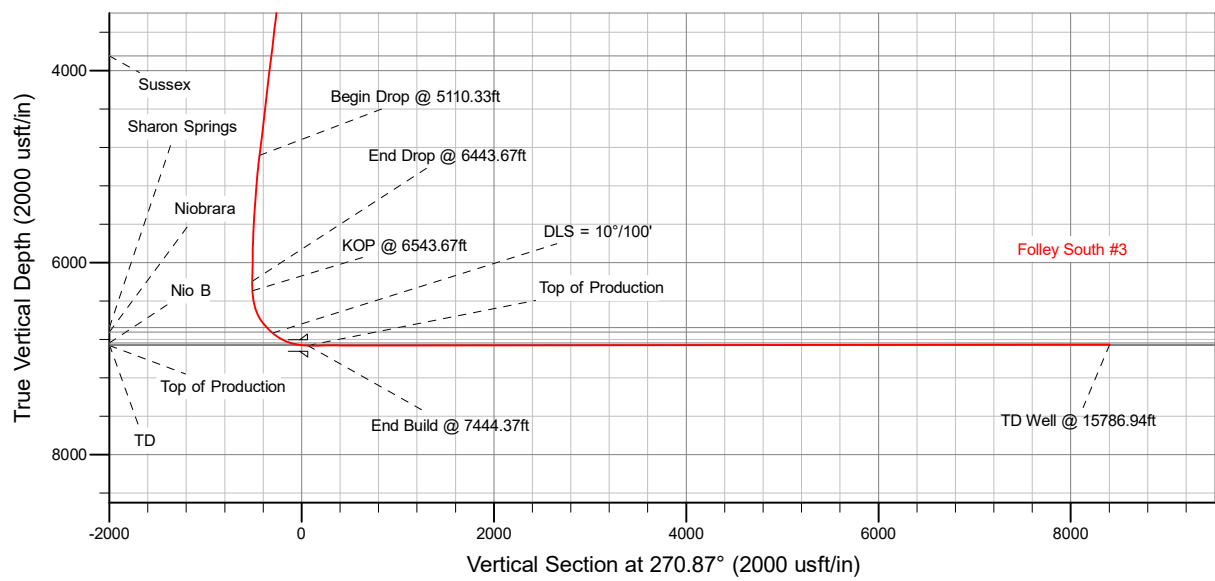
Calkins 24-11_151' Circle

CALKINS 24-14

Top of Production
1019' FNL
624' FEL
Section 24
NENE

9 5/8"

Top of Production



Plan: Permit Rev-4 (Folley South #3/Plan A)

Created By: _____ Date: 7/7/2016
Reviewed: _____ Date: _____

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well Folley South #3
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	5N-68W-13 Folley 16-13HZ Pad	North Reference:	True
Well:	Folley South #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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		5N-68W-13 Folley 16-13HZ Pad			
Site Position:		Northing:	14,670,156.60 usft	Latitude:	40.393842
From:	Lat/Long	Easting:	1,655,220.52 usft	Longitude:	-104.946832
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.03 °

Well	Folley South #3					
Well Position	+N/-S	-14.93 usft	Northing:	14,670,141.67 usft	Latitude:	40.393801
	+E/-W	0.00 usft	Easting:	1,655,220.53 usft	Longitude:	-104.946832
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,887.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2016	8.30	66.85	52,591

Design	Permit Rev-4				
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	270.87	

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	
1,833.33	20.00	162.00	1,806.42	-219.08	71.18	1.50	1.50	0.00	162.00	
5,110.33	20.00	162.00	4,885.79	-1,285.03	417.53	0.00	0.00	0.00	0.00	
6,443.67	0.00	0.00	6,192.21	-1,504.11	488.71	1.50	-1.50	-12.15	-180.00	
6,543.67	0.00	0.00	6,292.21	-1,504.11	488.71	0.00	0.00	0.00	0.00	
7,444.37	90.07	270.87	6,865.17	-1,495.43	-84.88	10.00	10.00	-9.90	270.87	
15,786.94	90.07	270.87	6,855.00	-1,369.28	-8,426.49	0.00	0.00	0.00	0.00	FOLLEY SOUTH #3_

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Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	5N-68W-13 Folley 16-13HZ Pad	North Reference:	True
Well:	Folley South #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
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
499.00	0.00	0.00	499.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills									
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	162.00	599.99	-1.24	0.40	-0.42	1.50	1.50	0.00
700.00	3.00	162.00	699.91	-4.98	1.62	-1.69	1.50	1.50	0.00
800.00	4.50	162.00	799.69	-11.20	3.64	-3.81	1.50	1.50	0.00
900.00	6.00	162.00	899.27	-19.90	6.47	-6.77	1.50	1.50	0.00
1,000.00	7.50	162.00	998.57	-31.08	10.10	-10.57	1.50	1.50	0.00
1,100.00	9.00	162.00	1,097.54	-44.73	14.53	-15.21	1.50	1.50	0.00
1,200.00	10.50	162.00	1,196.09	-60.83	19.77	-20.69	1.50	1.50	0.00
1,300.00	12.00	162.00	1,294.16	-79.38	25.79	-27.00	1.50	1.50	0.00
1,400.00	13.50	162.00	1,391.70	-100.37	32.61	-34.13	1.50	1.50	0.00
1,500.00	15.00	162.00	1,488.62	-123.78	40.22	-42.09	1.50	1.50	0.00
1,600.00	16.50	162.00	1,584.86	-149.60	48.61	-50.87	1.50	1.50	0.00
1,700.00	18.00	162.00	1,680.36	-177.80	57.77	-60.46	1.50	1.50	0.00
1,800.00	19.50	162.00	1,775.05	-208.37	67.70	-70.86	1.50	1.50	0.00
1,826.50	19.90	162.00	1,800.00	-216.87	70.46	-73.75	1.50	1.50	0.00
9 5/8"									
1,833.33	20.00	162.00	1,806.42	-219.08	71.18	-74.50	1.50	1.50	0.00
End Nudge @ 1833.33ft									
1,900.00	20.00	162.00	1,869.07	-240.77	78.23	-81.88	0.00	0.00	0.00
2,000.00	20.00	162.00	1,963.04	-273.30	88.80	-92.94	0.00	0.00	0.00
2,100.00	20.00	162.00	2,057.01	-305.82	99.37	-104.00	0.00	0.00	0.00
2,200.00	20.00	162.00	2,150.97	-338.35	109.94	-115.06	0.00	0.00	0.00
2,300.00	20.00	162.00	2,244.94	-370.88	120.51	-126.12	0.00	0.00	0.00
2,400.00	20.00	162.00	2,338.91	-403.41	131.08	-137.19	0.00	0.00	0.00
2,500.00	20.00	162.00	2,432.88	-435.94	141.64	-148.25	0.00	0.00	0.00
2,600.00	20.00	162.00	2,526.85	-468.46	152.21	-159.31	0.00	0.00	0.00
2,700.00	20.00	162.00	2,620.82	-500.99	162.78	-170.37	0.00	0.00	0.00
2,800.00	20.00	162.00	2,714.79	-533.52	173.35	-181.43	0.00	0.00	0.00
2,900.00	20.00	162.00	2,808.76	-566.05	183.92	-192.49	0.00	0.00	0.00
3,000.00	20.00	162.00	2,902.73	-598.58	194.49	-203.56	0.00	0.00	0.00
3,100.00	20.00	162.00	2,996.70	-631.10	205.06	-214.62	0.00	0.00	0.00
3,200.00	20.00	162.00	3,090.67	-663.63	215.63	-225.68	0.00	0.00	0.00
3,300.00	20.00	162.00	3,184.64	-696.16	226.20	-236.74	0.00	0.00	0.00
3,400.00	20.00	162.00	3,278.61	-728.69	236.77	-247.80	0.00	0.00	0.00
3,500.00	20.00	162.00	3,372.58	-761.22	247.33	-258.86	0.00	0.00	0.00
3,600.00	20.00	162.00	3,466.54	-793.74	257.90	-269.93	0.00	0.00	0.00
3,700.00	20.00	162.00	3,560.51	-826.27	268.47	-280.99	0.00	0.00	0.00
3,800.00	20.00	162.00	3,654.48	-858.80	279.04	-292.05	0.00	0.00	0.00
3,900.00	20.00	162.00	3,748.45	-891.33	289.61	-303.11	0.00	0.00	0.00
4,000.00	20.00	162.00	3,842.42	-923.86	300.18	-314.17	0.00	0.00	0.00
4,003.81	20.00	162.00	3,846.00	-925.10	300.58	-314.59	0.00	0.00	0.00
Sussex									
4,100.00	20.00	162.00	3,936.39	-956.39	310.75	-325.23	0.00	0.00	0.00
4,200.00	20.00	162.00	4,030.36	-988.91	321.32	-336.30	0.00	0.00	0.00
4,300.00	20.00	162.00	4,124.33	-1,021.44	331.89	-347.36	0.00	0.00	0.00
4,400.00	20.00	162.00	4,218.30	-1,053.97	342.46	-358.42	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well Folley South #3
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	5N-68W-13 Folley 16-13HZ Pad	North Reference:	True
Well:	Folley South #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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	20.00	162.00	4,312.27	-1,086.50	353.02	-369.48	0.00	0.00	0.00
4,600.00	20.00	162.00	4,406.24	-1,119.03	363.59	-380.54	0.00	0.00	0.00
4,700.00	20.00	162.00	4,500.21	-1,151.55	374.16	-391.60	0.00	0.00	0.00
4,800.00	20.00	162.00	4,594.18	-1,184.08	384.73	-402.67	0.00	0.00	0.00
4,900.00	20.00	162.00	4,688.14	-1,216.61	395.30	-413.73	0.00	0.00	0.00
5,000.00	20.00	162.00	4,782.11	-1,249.14	405.87	-424.79	0.00	0.00	0.00
5,100.00	20.00	162.00	4,876.08	-1,281.67	416.44	-435.85	0.00	0.00	0.00
5,110.33	20.00	162.00	4,885.79	-1,285.03	417.53	-436.99	0.00	0.00	0.00
Begin Drop @ 5110.33ft									
5,200.00	18.66	162.00	4,970.40	-1,313.25	426.70	-446.59	1.50	-1.50	0.00
5,300.00	17.16	162.00	5,065.56	-1,342.49	436.20	-456.53	1.50	-1.50	0.00
5,400.00	15.66	162.00	5,161.49	-1,369.35	444.93	-465.67	1.50	-1.50	0.00
5,500.00	14.16	162.00	5,258.12	-1,393.81	452.88	-473.99	1.50	-1.50	0.00
5,600.00	12.66	162.00	5,355.39	-1,415.86	460.04	-481.49	1.50	-1.50	0.00
5,700.00	11.16	162.00	5,453.24	-1,435.48	466.41	-488.16	1.50	-1.50	0.00
5,800.00	9.66	162.00	5,551.59	-1,452.65	472.00	-494.00	1.50	-1.50	0.00
5,900.00	8.16	162.00	5,650.38	-1,467.37	476.78	-499.00	1.50	-1.50	0.00
6,000.00	6.66	162.00	5,749.54	-1,479.63	480.76	-503.17	1.50	-1.50	0.00
6,100.00	5.16	162.00	5,849.01	-1,489.42	483.94	-506.50	1.50	-1.50	0.00
6,200.00	3.66	162.00	5,948.71	-1,496.72	486.31	-508.98	1.50	-1.50	0.00
6,300.00	2.16	162.00	6,048.58	-1,501.54	487.88	-510.62	1.50	-1.50	0.00
6,400.00	0.66	162.00	6,148.55	-1,503.87	488.64	-511.42	1.50	-1.50	0.00
6,443.67	0.00	0.00	6,192.22	-1,504.11	488.71	-511.50	1.50	-1.50	-370.96
End Drop @ 6443.67ft									
6,500.00	0.00	0.00	6,248.55	-1,504.11	488.71	-511.50	0.00	0.00	0.00
6,543.67	0.00	0.00	6,292.22	-1,504.11	488.71	-511.50	0.00	0.00	0.00
KOP @ 6543.67ft									
6,600.00	5.63	270.87	6,348.46	-1,504.07	485.95	-508.73	10.00	10.00	-158.23
6,700.00	15.63	270.87	6,446.62	-1,503.79	467.52	-490.30	10.00	10.00	0.00
6,800.00	25.63	270.87	6,540.08	-1,503.26	432.33	-455.11	10.00	10.00	0.00
6,900.00	35.63	270.87	6,626.02	-1,502.49	381.45	-404.22	10.00	10.00	0.00
6,964.21	42.05	270.87	6,676.00	-1,501.88	341.20	-363.97	10.00	10.00	0.00
Sharon Springs									
7,000.00	45.63	270.87	6,701.81	-1,501.50	316.42	-339.18	10.00	10.00	0.00
7,031.19	48.75	270.87	6,723.00	-1,501.16	293.54	-316.30	10.00	10.00	0.00
Niobrara									
7,050.00	50.63	270.87	6,735.17	-1,500.94	279.20	-301.96	10.00	10.00	0.00
DLS = 10°/100'									
7,100.00	55.63	270.87	6,765.16	-1,500.34	239.21	-261.97	10.00	10.00	0.00
7,200.00	65.63	270.87	6,814.14	-1,499.02	152.18	-174.93	10.00	10.00	0.00
7,266.51	72.28	270.87	6,838.00	-1,498.08	90.15	-112.89	10.00	10.00	0.00
Nio B									
7,300.00	75.63	270.87	6,847.25	-1,497.60	57.97	-80.70	10.00	10.00	0.00
7,400.00	85.63	270.87	6,863.51	-1,496.10	-40.56	17.84	10.00	10.00	0.00
7,444.37	90.07	270.87	6,865.17	-1,495.43	-84.88	62.16	10.00	10.00	0.00
End Build @ 7444.37ft - Top of Production - Top of Production									
7,500.00	90.07	270.87	6,865.10	-1,494.59	-140.50	117.79	0.00	0.00	0.00
7,600.00	90.07	270.87	6,864.98	-1,493.08	-240.49	217.79	0.00	0.00	0.00
7,700.00	90.07	270.87	6,864.86	-1,491.57	-340.48	317.79	0.00	0.00	0.00
7,800.00	90.07	270.87	6,864.74	-1,490.06	-440.47	417.79	0.00	0.00	0.00
7,900.00	90.07	270.87	6,864.62	-1,488.54	-540.46	517.79	0.00	0.00	0.00
8,000.00	90.07	270.87	6,864.49	-1,487.03	-640.45	617.79	0.00	0.00	0.00
8,100.00	90.07	270.87	6,864.37	-1,485.52	-740.44	717.79	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well Folley South #3
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	5N-68W-13 Folley 16-13HZ Pad	North Reference:	True
Well:	Folley South #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,200.00	90.07	270.87	6,864.25	-1,484.01	-840.42	817.79	0.00	0.00	0.00
8,300.00	90.07	270.87	6,864.13	-1,482.50	-940.41	917.79	0.00	0.00	0.00
8,400.00	90.07	270.87	6,864.01	-1,480.98	-1,040.40	1,017.79	0.00	0.00	0.00
8,500.00	90.07	270.87	6,863.88	-1,479.47	-1,140.39	1,117.79	0.00	0.00	0.00
8,600.00	90.07	270.87	6,863.76	-1,477.96	-1,240.38	1,217.79	0.00	0.00	0.00
8,700.00	90.07	270.87	6,863.64	-1,476.45	-1,340.37	1,317.79	0.00	0.00	0.00
8,800.00	90.07	270.87	6,863.52	-1,474.93	-1,440.35	1,417.79	0.00	0.00	0.00
8,900.00	90.07	270.87	6,863.40	-1,473.42	-1,540.34	1,517.79	0.00	0.00	0.00
9,000.00	90.07	270.87	6,863.28	-1,471.91	-1,640.33	1,617.79	0.00	0.00	0.00
9,100.00	90.07	270.87	6,863.15	-1,470.40	-1,740.32	1,717.79	0.00	0.00	0.00
9,200.00	90.07	270.87	6,863.03	-1,468.89	-1,840.31	1,817.79	0.00	0.00	0.00
9,300.00	90.07	270.87	6,862.91	-1,467.37	-1,940.30	1,917.79	0.00	0.00	0.00
9,400.00	90.07	270.87	6,862.79	-1,465.86	-2,040.29	2,017.79	0.00	0.00	0.00
9,500.00	90.07	270.87	6,862.67	-1,464.35	-2,140.27	2,117.79	0.00	0.00	0.00
9,600.00	90.07	270.87	6,862.54	-1,462.84	-2,240.26	2,217.79	0.00	0.00	0.00
9,700.00	90.07	270.87	6,862.42	-1,461.32	-2,340.25	2,317.79	0.00	0.00	0.00
9,800.00	90.07	270.87	6,862.30	-1,459.81	-2,440.24	2,417.79	0.00	0.00	0.00
9,900.00	90.07	270.87	6,862.18	-1,458.30	-2,540.23	2,517.79	0.00	0.00	0.00
10,000.00	90.07	270.87	6,862.06	-1,456.79	-2,640.22	2,617.79	0.00	0.00	0.00
10,100.00	90.07	270.87	6,861.93	-1,455.28	-2,740.21	2,717.79	0.00	0.00	0.00
10,200.00	90.07	270.87	6,861.81	-1,453.76	-2,840.19	2,817.79	0.00	0.00	0.00
10,300.00	90.07	270.87	6,861.69	-1,452.25	-2,940.18	2,917.79	0.00	0.00	0.00
10,400.00	90.07	270.87	6,861.57	-1,450.74	-3,040.17	3,017.79	0.00	0.00	0.00
10,500.00	90.07	270.87	6,861.45	-1,449.23	-3,140.16	3,117.79	0.00	0.00	0.00
10,600.00	90.07	270.87	6,861.32	-1,447.71	-3,240.15	3,217.79	0.00	0.00	0.00
10,700.00	90.07	270.87	6,861.20	-1,446.20	-3,340.14	3,317.79	0.00	0.00	0.00
10,800.00	90.07	270.87	6,861.08	-1,444.69	-3,440.12	3,417.79	0.00	0.00	0.00
10,900.00	90.07	270.87	6,860.96	-1,443.18	-3,540.11	3,517.79	0.00	0.00	0.00
11,000.00	90.07	270.87	6,860.84	-1,441.67	-3,640.10	3,617.79	0.00	0.00	0.00
11,100.00	90.07	270.87	6,860.71	-1,440.15	-3,740.09	3,717.79	0.00	0.00	0.00
11,200.00	90.07	270.87	6,860.59	-1,438.64	-3,840.08	3,817.79	0.00	0.00	0.00
11,300.00	90.07	270.87	6,860.47	-1,437.13	-3,940.07	3,917.79	0.00	0.00	0.00
11,400.00	90.07	270.87	6,860.35	-1,435.62	-4,040.06	4,017.79	0.00	0.00	0.00
11,500.00	90.07	270.87	6,860.23	-1,434.10	-4,140.04	4,117.79	0.00	0.00	0.00
11,600.00	90.07	270.87	6,860.11	-1,432.59	-4,240.03	4,217.79	0.00	0.00	0.00
11,700.00	90.07	270.87	6,859.98	-1,431.08	-4,340.02	4,317.79	0.00	0.00	0.00
11,800.00	90.07	270.87	6,859.86	-1,429.57	-4,440.01	4,417.79	0.00	0.00	0.00
11,900.00	90.07	270.87	6,859.74	-1,428.05	-4,540.00	4,517.79	0.00	0.00	0.00
12,000.00	90.07	270.87	6,859.62	-1,426.54	-4,639.99	4,617.79	0.00	0.00	0.00
12,100.00	90.07	270.87	6,859.50	-1,425.03	-4,739.97	4,717.79	0.00	0.00	0.00
12,200.00	90.07	270.87	6,859.37	-1,423.52	-4,839.96	4,817.79	0.00	0.00	0.00
12,300.00	90.07	270.87	6,859.25	-1,422.01	-4,939.95	4,917.79	0.00	0.00	0.00
12,400.00	90.07	270.87	6,859.13	-1,420.49	-5,039.94	5,017.79	0.00	0.00	0.00
12,500.00	90.07	270.87	6,859.01	-1,418.98	-5,139.93	5,117.79	0.00	0.00	0.00
12,600.00	90.07	270.87	6,858.89	-1,417.47	-5,239.92	5,217.79	0.00	0.00	0.00
12,700.00	90.07	270.87	6,858.76	-1,415.96	-5,339.91	5,317.79	0.00	0.00	0.00
12,800.00	90.07	270.87	6,858.64	-1,414.44	-5,439.89	5,417.79	0.00	0.00	0.00
12,900.00	90.07	270.87	6,858.52	-1,412.93	-5,539.88	5,517.79	0.00	0.00	0.00
13,000.00	90.07	270.87	6,858.40	-1,411.42	-5,639.87	5,617.79	0.00	0.00	0.00
13,100.00	90.07	270.87	6,858.28	-1,409.91	-5,739.86	5,717.79	0.00	0.00	0.00
13,200.00	90.07	270.87	6,858.15	-1,408.40	-5,839.85	5,817.79	0.00	0.00	0.00
13,300.00	90.07	270.87	6,858.03	-1,406.88	-5,939.84	5,917.79	0.00	0.00	0.00
13,400.00	90.07	270.87	6,857.91	-1,405.37	-6,039.83	6,017.79	0.00	0.00	0.00
13,500.00	90.07	270.87	6,857.79	-1,403.86	-6,139.81	6,117.79	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well Folley South #3
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	5N-68W-13 Folley 16-13HZ Pad	North Reference:	True
Well:	Folley South #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

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)
13,600.00	90.07	270.87	6,857.67	-1,402.35	-6,239.80	6,217.79	0.00	0.00	0.00
13,700.00	90.07	270.87	6,857.54	-1,400.83	-6,339.79	6,317.79	0.00	0.00	0.00
13,800.00	90.07	270.87	6,857.42	-1,399.32	-6,439.78	6,417.79	0.00	0.00	0.00
13,900.00	90.07	270.87	6,857.30	-1,397.81	-6,539.77	6,517.79	0.00	0.00	0.00
14,000.00	90.07	270.87	6,857.18	-1,396.30	-6,639.76	6,617.79	0.00	0.00	0.00
14,100.00	90.07	270.87	6,857.06	-1,394.79	-6,739.74	6,717.79	0.00	0.00	0.00
14,200.00	90.07	270.87	6,856.94	-1,393.27	-6,839.73	6,817.79	0.00	0.00	0.00
14,300.00	90.07	270.87	6,856.81	-1,391.76	-6,939.72	6,917.79	0.00	0.00	0.00
14,400.00	90.07	270.87	6,856.69	-1,390.25	-7,039.71	7,017.79	0.00	0.00	0.00
14,500.00	90.07	270.87	6,856.57	-1,388.74	-7,139.70	7,117.79	0.00	0.00	0.00
14,600.00	90.07	270.87	6,856.45	-1,387.22	-7,239.69	7,217.79	0.00	0.00	0.00
14,700.00	90.07	270.87	6,856.33	-1,385.71	-7,339.68	7,317.79	0.00	0.00	0.00
14,800.00	90.07	270.87	6,856.20	-1,384.20	-7,439.66	7,417.79	0.00	0.00	0.00
14,900.00	90.07	270.87	6,856.08	-1,382.69	-7,539.65	7,517.79	0.00	0.00	0.00
15,000.00	90.07	270.87	6,855.96	-1,381.18	-7,639.64	7,617.79	0.00	0.00	0.00
15,100.00	90.07	270.87	6,855.84	-1,379.66	-7,739.63	7,717.79	0.00	0.00	0.00
15,200.00	90.07	270.87	6,855.72	-1,378.15	-7,839.62	7,817.79	0.00	0.00	0.00
15,300.00	90.07	270.87	6,855.59	-1,376.64	-7,939.61	7,917.79	0.00	0.00	0.00
15,400.00	90.07	270.87	6,855.47	-1,375.13	-8,039.60	8,017.79	0.00	0.00	0.00
15,500.00	90.07	270.87	6,855.35	-1,373.61	-8,139.58	8,117.79	0.00	0.00	0.00
15,600.00	90.07	270.87	6,855.23	-1,372.10	-8,239.57	8,217.79	0.00	0.00	0.00
15,700.00	90.07	270.87	6,855.11	-1,370.59	-8,339.56	8,317.79	0.00	0.00	0.00
15,786.93	90.07	270.87	6,855.00	-1,369.28	-8,426.48	8,404.72	0.00	0.00	0.00
TD									
15,786.94	90.07	270.87	6,855.00	-1,369.28	-8,426.49	8,404.73	0.01	0.00	0.00
TD Well @ 15786.94ft									

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude		
Calkins 24-11_151' Circl - plan misses target center by 1328.68usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Circle (radius 151.00)	0.00	0.00	0.00	-1,325.56	-91.05	14,668,816.06	1,655,130.27	40.390161 -104.947159		
FOLLEY SOUTH #3_SH - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,670,141.67	1,655,220.53	40.393801 -104.946832		
FOLLEY SOUTH #3_PB - plan misses target center by 0.51usft at 15757.06usft MD (6855.04 TVD, -1369.73 N, -8396.61 E) - Point	0.00	0.00	6,855.00	-1,369.22	-8,396.60	14,668,767.40	1,646,824.75	40.390037 -104.976987		
FOLLEY SOUTH #3_BH - plan hits target center - Point	0.00	0.00	6,855.00	-1,369.28	-8,426.49	14,668,767.33	1,646,794.86	40.390037 -104.977094		
FOLLEY SOUTH #3_PH - plan misses target center by 127.91usft at 7443.08usft MD (6865.17 TVD, -1495.45 N, -83.59 E) - Point	0.00	0.00	6,865.16	-1,367.55	-81.66	14,668,774.07	1,655,139.69	40.390046 -104.947126		

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well Folley South #3
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4904.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4904.00usft (D Rig)
Site:	5N-68W-13 Folley 16-13HZ Pad	North Reference:	True
Well:	Folley South #3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-4		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,826.50	1,800.00	9 5/8"	9-5/8	13-1/2	
7,444.37	6,865.17	Top of Production	5-1/2	8-1/2	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
499.00	499.00	Fox Hills		0.00	
4,003.81	3,846.00	Sussex		0.00	
6,964.21	6,676.00	Sharon Springs		0.00	
7,031.19	6,723.00	Niobrara		0.00	
7,266.51	6,838.00	Nio B		0.00	
15,786.93	6,855.00	TD		0.00	
7,444.37	6,865.17	Top of Production		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	
1,833.33	1,806.42	-219.08	71.18	End Nudge @ 1833.33ft	
5,110.33	4,885.79	-1,285.03	417.53	Begin Drop @ 5110.33ft	
6,443.67	6,192.22	-1,504.11	488.71	End Drop @ 6443.67ft	
6,543.67	6,292.22	-1,504.11	488.71	KOP @ 6543.67ft	
7,050.00	6,735.17	-1,500.94	279.20	DLS = 10°/100'	
7,444.37	6,865.17	-1,495.43	-84.88	End Build @ 7444.37ft	
15,786.94	6,855.00	-1,369.28	-8,426.49	TD Well @ 15786.94ft	