

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**1N-67W-14 Norden 15-14HZ Pad**

**NORDEN 2N-14HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**11 November, 2015**

Project: WELD-NAD83-UTMFT13N  
 Site: 1N-67W-14 Norden 15-14HZ Pad  
 Well: NORDEN 2N-14HZ  
 Wellbore: Plan A  
 Design: Permit Rev-1

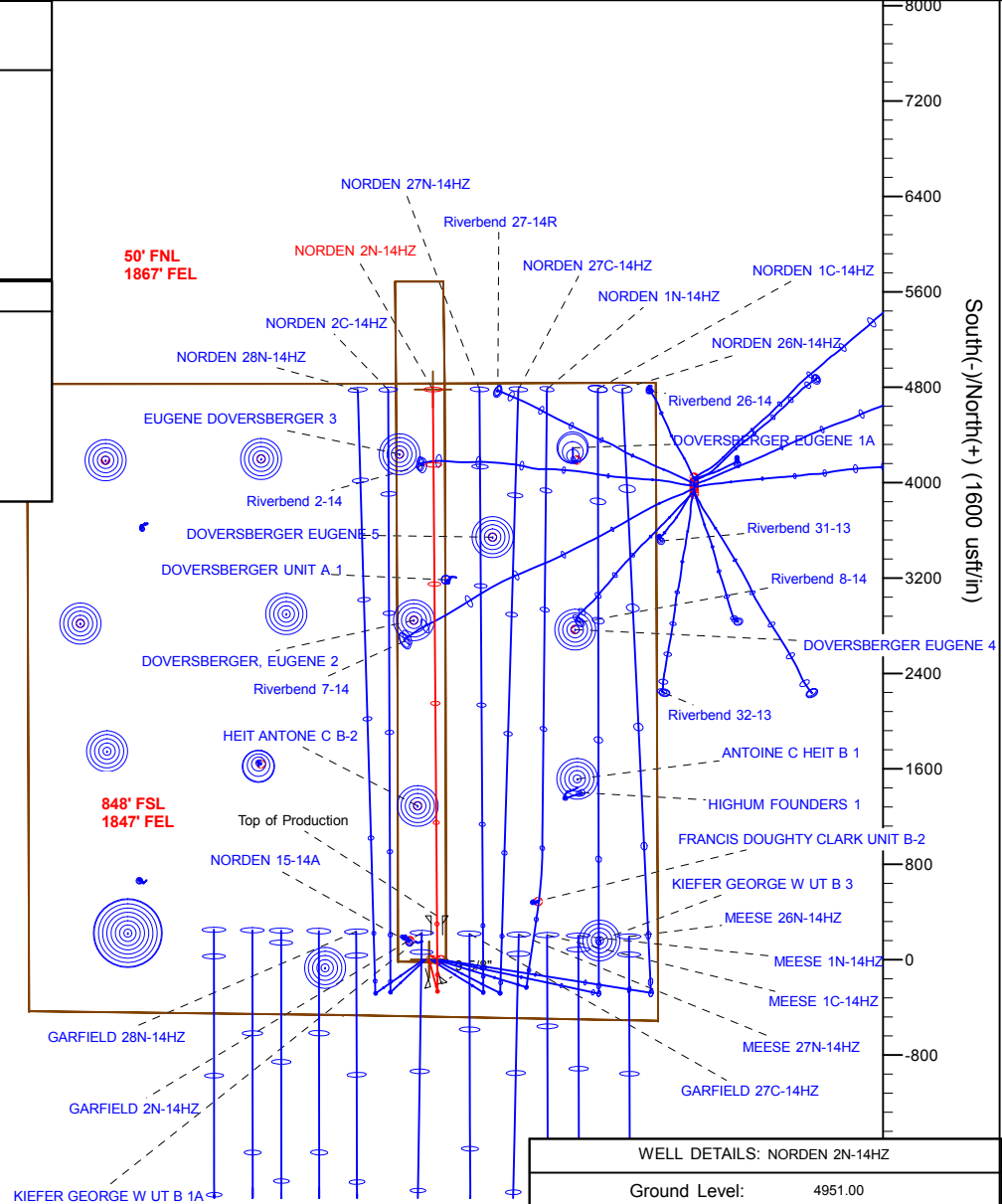
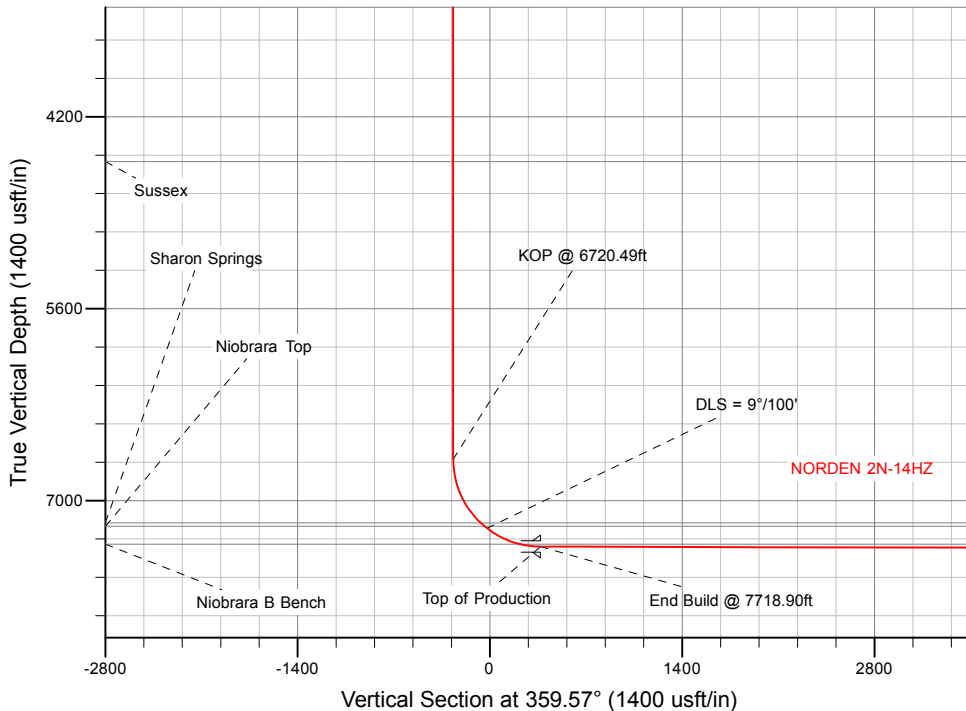
# US ROCKIES WATTENBERG PLANNING

## 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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	866.67	10.00	165.00	863.29	-56.05	15.02	1.50	165.00	-56.16	
4	1866.67	10.00	165.00	1848.09	-223.78	59.96	0.00	0.00	-224.23	
5	2366.67	0.00	0.00	2345.56	-265.82	71.23	2.00	180.00	-266.35	
6	6720.49	0.00	0.00	6699.38	-265.82	71.23	0.00	0.00	-266.35	
7	7718.90	89.86	359.57	7336.00	369.19	66.41	9.00	359.57	368.68	
8	12131.43	89.86	359.57	7347.00	4781.58	32.96	0.00	0.00	4781.20	NORDEN 2N-14HZ_Bottom Hole

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
NORDEN 2N-14HZ_SHL	0.00	0.00	0.00	40.045022	-104.855320	Point
NORDEN 2N-14HZ_Bottom Hole	7347.00	4781.58	32.96	40.058153	-104.855202	Point



WELL DETAILS: NORDEN 2N-14HZ	
Ground Level:	4951.00
RKB = 17' @ 4968.00usft (Drilling Rig)	
Plan: Permit Rev-1 (NORDEN 2N-14HZ/Plan A)	
Created By: Clint Eshelman	Date: 11/11/2015
Reviewed: _____	Date: _____

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well NORDEN 2N-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Site:</b>	1N-67W-14 Norden 15-14HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	NORDEN 2N-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

<b>Site</b>	1N-67W-14 Norden 15-14HZ Pad				
<b>Site Position:</b>		<b>Northing:</b>	14,543,161.05 usft	<b>Latitude:</b>	40.045023
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,680,863.04 usft	<b>Longitude:</b>	-104.855480
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.09 °

<b>Well</b>	NORDEN 2N-14HZ					
<b>Well Position</b>	<b>+N-S</b>	-0.36 usft	<b>Northing:</b>	14,543,160.76 usft	<b>Latitude:</b>	40.045022
	<b>+E-W</b>	44.78 usft	<b>Easting:</b>	1,680,907.82 usft	<b>Longitude:</b>	-104.855320
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	4,951.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	11/10/2015	8.29	66.60	52,471

<b>Design</b>	Permit Rev-1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	359.57

<b>Plan Sections</b>										
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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
866.67	10.00	165.00	863.29	-56.05	15.02	1.50	1.50	0.00	165.00	
1,866.67	10.00	165.00	1,848.09	-223.78	59.96	0.00	0.00	0.00	0.00	
2,366.67	0.00	0.00	2,345.56	-265.82	71.23	2.00	-2.00	0.00	180.00	
6,720.49	0.00	0.00	6,699.38	-265.82	71.23	0.00	0.00	0.00	0.00	
7,718.90	89.86	359.57	7,336.00	369.19	66.41	9.00	9.00	-0.04	359.57	
12,131.43	89.86	359.57	7,347.00	4,781.58	32.96	0.00	0.00	0.00	0.00	NORDEN 2N-14HZ_E

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well NORDEN 2N-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Site:</b>	1N-67W-14 Norden 15-14HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	NORDEN 2N-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 200.00ft</b>										
300.00	1.50	165.00	299.99	-1.26	0.34	-1.27	1.50	1.50	0.00	0.00
400.00	3.00	165.00	399.91	-5.06	1.35	-5.07	1.50	1.50	0.00	0.00
500.00	4.50	165.00	499.69	-11.37	3.05	-11.40	1.50	1.50	0.00	0.00
600.00	6.00	165.00	599.27	-20.21	5.42	-20.25	1.50	1.50	0.00	0.00
700.00	7.50	165.00	698.57	-31.56	8.46	-31.63	1.50	1.50	0.00	0.00
800.00	9.00	165.00	797.54	-45.42	12.17	-45.51	1.50	1.50	0.00	0.00
866.67	10.00	165.00	863.29	-56.05	15.02	-56.16	1.50	1.50	0.00	0.00
<b>End Nudge @ 866.67ft</b>										
900.00	10.00	165.00	896.11	-61.64	16.52	-61.77	0.00	0.00	0.00	0.00
1,000.00	10.00	165.00	994.59	-78.42	21.01	-78.57	0.00	0.00	0.00	0.00
1,100.00	10.00	165.00	1,093.08	-95.19	25.51	-95.38	0.00	0.00	0.00	0.00
1,200.00	10.00	165.00	1,191.56	-111.96	30.00	-112.19	0.00	0.00	0.00	0.00
1,300.00	10.00	165.00	1,290.04	-128.74	34.49	-128.99	0.00	0.00	0.00	0.00
1,336.52	10.00	165.00	1,326.00	-134.86	36.14	-135.13	0.00	0.00	0.00	0.00
<b>Fox Hills</b>										
1,400.00	10.00	165.00	1,388.52	-145.51	38.99	-145.80	0.00	0.00	0.00	0.00
1,500.00	10.00	165.00	1,487.00	-162.28	43.48	-162.60	0.00	0.00	0.00	0.00
1,600.00	10.00	165.00	1,585.48	-179.06	47.98	-179.41	0.00	0.00	0.00	0.00
1,700.00	10.00	165.00	1,683.96	-195.83	52.47	-196.22	0.00	0.00	0.00	0.00
1,800.00	10.00	165.00	1,782.44	-212.60	56.97	-213.02	0.00	0.00	0.00	0.00
1,817.83	10.00	165.00	1,800.00	-215.59	57.77	-216.02	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
1,866.67	10.00	165.00	1,848.10	-223.78	59.96	-224.23	0.00	0.00	0.00	0.00
<b>Begin Drop @ 1866.67ft</b>										
1,900.00	9.33	165.00	1,880.95	-229.19	61.41	-229.64	2.00	-2.00	0.00	0.00
2,000.00	7.33	165.00	1,979.89	-243.19	65.16	-243.67	2.00	-2.00	0.00	0.00
2,100.00	5.33	165.00	2,079.28	-253.84	68.02	-254.35	2.00	-2.00	0.00	0.00
2,200.00	3.33	165.00	2,178.99	-261.14	69.97	-261.66	2.00	-2.00	0.00	0.00
2,300.00	1.33	165.00	2,278.90	-265.07	71.03	-265.60	2.00	-2.00	0.00	0.00
2,366.67	0.00	0.00	2,345.56	-265.82	71.23	-266.35	2.00	-2.00	0.00	0.00
<b>End Drop @ 2366.67ft</b>										
2,400.00	0.00	0.00	2,378.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,478.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,578.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,678.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,778.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,878.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	2,978.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,078.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,178.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,278.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,378.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,478.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,578.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,678.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,778.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,878.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,978.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,078.89	-265.82	71.23	-266.35	0.00	0.00	0.00	0.00

# Anadarko Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well NORDEN 2N-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Site:</b>	1N-67W-14 Norden 15-14HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	NORDEN 2N-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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	0.00	0.00	4,178.89	-265.82	71.23	-266.35	0.00	0.00	0.00
4,300.00	0.00	0.00	4,278.89	-265.82	71.23	-266.35	0.00	0.00	0.00
4,400.00	0.00	0.00	4,378.89	-265.82	71.23	-266.35	0.00	0.00	0.00
4,500.00	0.00	0.00	4,478.89	-265.82	71.23	-266.35	0.00	0.00	0.00
4,549.11	0.00	0.00	4,528.00	-265.82	71.23	-266.35	0.00	0.00	0.00
<b>Sussex</b>									
4,600.00	0.00	0.00	4,578.89	-265.82	71.23	-266.35	0.00	0.00	0.00
4,700.00	0.00	0.00	4,678.89	-265.82	71.23	-266.35	0.00	0.00	0.00
4,800.00	0.00	0.00	4,778.89	-265.82	71.23	-266.35	0.00	0.00	0.00
4,900.00	0.00	0.00	4,878.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,000.00	0.00	0.00	4,978.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,100.00	0.00	0.00	5,078.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,200.00	0.00	0.00	5,178.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,300.00	0.00	0.00	5,278.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,400.00	0.00	0.00	5,378.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,500.00	0.00	0.00	5,478.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,600.00	0.00	0.00	5,578.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,700.00	0.00	0.00	5,678.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,800.00	0.00	0.00	5,778.89	-265.82	71.23	-266.35	0.00	0.00	0.00
5,900.00	0.00	0.00	5,878.89	-265.82	71.23	-266.35	0.00	0.00	0.00
6,000.00	0.00	0.00	5,978.89	-265.82	71.23	-266.35	0.00	0.00	0.00
6,100.00	0.00	0.00	6,078.89	-265.82	71.23	-266.35	0.00	0.00	0.00
6,200.00	0.00	0.00	6,178.89	-265.82	71.23	-266.35	0.00	0.00	0.00
6,300.00	0.00	0.00	6,278.89	-265.82	71.23	-266.35	0.00	0.00	0.00
6,400.00	0.00	0.00	6,378.89	-265.82	71.23	-266.35	0.00	0.00	0.00
6,500.00	0.00	0.00	6,478.89	-265.82	71.23	-266.35	0.00	0.00	0.00
6,600.00	0.00	0.00	6,578.89	-265.82	71.23	-266.35	0.00	0.00	0.00
6,700.00	0.00	0.00	6,678.89	-265.82	71.23	-266.35	0.00	0.00	0.00
6,720.49	0.00	0.00	6,699.38	-265.82	71.23	-266.35	0.00	0.00	0.00
<b>KOP @ 6720.49ft</b>									
6,800.00	7.16	359.57	6,778.69	-260.86	71.19	-261.39	9.00	9.00	0.00
6,900.00	16.16	359.57	6,876.52	-240.68	71.04	-241.21	9.00	9.00	0.00
7,000.00	25.16	359.57	6,970.00	-205.44	70.77	-205.97	9.00	9.00	0.00
7,100.00	34.16	359.57	7,056.81	-156.02	70.39	-156.54	9.00	9.00	0.00
7,200.00	43.16	359.57	7,134.82	-93.62	69.92	-94.14	9.00	9.00	0.00
7,239.38	46.70	359.57	7,162.70	-65.81	69.71	-66.33	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,277.04	50.09	359.57	7,187.70	-37.66	69.50	-38.18	9.00	9.00	0.00
<b>Niobrara Top</b>									
7,300.00	52.16	359.57	7,202.11	-19.78	69.36	-20.30	9.00	9.00	0.00
<b>DLS = 9°/100'</b>									
7,400.00	61.16	359.57	7,257.02	63.67	68.73	63.15	9.00	9.00	0.00
7,500.00	70.16	359.57	7,298.20	154.68	68.04	154.16	9.00	9.00	0.00
7,567.05	76.19	359.57	7,317.60	218.83	67.55	218.32	9.00	9.00	0.00
<b>Niobrara B Bench</b>									
7,600.00	79.16	359.57	7,324.63	251.01	67.31	250.50	9.00	9.00	0.00
7,700.00	88.16	359.57	7,335.67	350.30	66.56	349.79	9.00	9.00	0.00
7,718.90	89.86	359.57	7,336.00	369.19	66.41	368.68	9.00	9.00	0.00
<b>End Build @ 7718.90ft - Top of Production</b>									
7,800.00	89.86	359.57	7,336.20	450.29	65.80	449.78	0.00	0.00	0.00
7,900.00	89.86	359.57	7,336.45	550.29	65.04	549.78	0.00	0.00	0.00
8,000.00	89.86	359.57	7,336.70	650.28	64.28	649.78	0.00	0.00	0.00
8,100.00	89.86	359.57	7,336.95	750.28	63.52	749.78	0.00	0.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well NORDEN 2N-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Site:</b>	1N-67W-14 Norden 15-14HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	NORDEN 2N-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)
8,200.00	89.86	359.57	7,337.20	850.28	62.77	849.78	0.00	0.00	0.00
8,300.00	89.86	359.57	7,337.45	950.27	62.01	949.78	0.00	0.00	0.00
8,400.00	89.86	359.57	7,337.70	1,050.27	61.25	1,049.78	0.00	0.00	0.00
8,500.00	89.86	359.57	7,337.95	1,150.27	60.49	1,149.78	0.00	0.00	0.00
8,600.00	89.86	359.57	7,338.20	1,250.26	59.73	1,249.78	0.00	0.00	0.00
8,700.00	89.86	359.57	7,338.44	1,350.26	58.97	1,349.78	0.00	0.00	0.00
8,800.00	89.86	359.57	7,338.69	1,450.26	58.22	1,449.78	0.00	0.00	0.00
8,900.00	89.86	359.57	7,338.94	1,550.25	57.46	1,549.78	0.00	0.00	0.00
9,000.00	89.86	359.57	7,339.19	1,650.25	56.70	1,649.78	0.00	0.00	0.00
9,100.00	89.86	359.57	7,339.44	1,750.25	55.94	1,749.78	0.00	0.00	0.00
9,200.00	89.86	359.57	7,339.69	1,850.24	55.18	1,849.78	0.00	0.00	0.00
9,300.00	89.86	359.57	7,339.94	1,950.24	54.43	1,949.78	0.00	0.00	0.00
9,400.00	89.86	359.57	7,340.19	2,050.24	53.67	2,049.78	0.00	0.00	0.00
9,500.00	89.86	359.57	7,340.44	2,150.23	52.91	2,149.78	0.00	0.00	0.00
9,600.00	89.86	359.57	7,340.69	2,250.23	52.15	2,249.78	0.00	0.00	0.00
9,700.00	89.86	359.57	7,340.94	2,350.23	51.39	2,349.78	0.00	0.00	0.00
9,800.00	89.86	359.57	7,341.19	2,450.23	50.64	2,449.78	0.00	0.00	0.00
9,900.00	89.86	359.57	7,341.44	2,550.22	49.88	2,549.78	0.00	0.00	0.00
10,000.00	89.86	359.57	7,341.69	2,650.22	49.12	2,649.78	0.00	0.00	0.00
10,100.00	89.86	359.57	7,341.94	2,750.22	48.36	2,749.78	0.00	0.00	0.00
10,200.00	89.86	359.57	7,342.18	2,850.21	47.60	2,849.77	0.00	0.00	0.00
10,300.00	89.86	359.57	7,342.43	2,950.21	46.84	2,949.77	0.00	0.00	0.00
10,400.00	89.86	359.57	7,342.68	3,050.21	46.09	3,049.77	0.00	0.00	0.00
10,500.00	89.86	359.57	7,342.93	3,150.20	45.33	3,149.77	0.00	0.00	0.00
10,600.00	89.86	359.57	7,343.18	3,250.20	44.57	3,249.77	0.00	0.00	0.00
10,700.00	89.86	359.57	7,343.43	3,350.20	43.81	3,349.77	0.00	0.00	0.00
10,800.00	89.86	359.57	7,343.68	3,450.19	43.05	3,449.77	0.00	0.00	0.00
10,900.00	89.86	359.57	7,343.93	3,550.19	42.30	3,549.77	0.00	0.00	0.00
11,000.00	89.86	359.57	7,344.18	3,650.19	41.54	3,649.77	0.00	0.00	0.00
11,100.00	89.86	359.57	7,344.43	3,750.18	40.78	3,749.77	0.00	0.00	0.00
11,200.00	89.86	359.57	7,344.68	3,850.18	40.02	3,849.77	0.00	0.00	0.00
11,300.00	89.86	359.57	7,344.93	3,950.18	39.26	3,949.77	0.00	0.00	0.00
11,400.00	89.86	359.57	7,345.18	4,050.17	38.51	4,049.77	0.00	0.00	0.00
11,500.00	89.86	359.57	7,345.43	4,150.17	37.75	4,149.77	0.00	0.00	0.00
11,600.00	89.86	359.57	7,345.68	4,250.17	36.99	4,249.77	0.00	0.00	0.00
11,700.00	89.86	359.57	7,345.92	4,350.16	36.23	4,349.77	0.00	0.00	0.00
11,800.00	89.86	359.57	7,346.17	4,450.16	35.47	4,449.77	0.00	0.00	0.00
11,900.00	89.86	359.57	7,346.42	4,550.16	34.71	4,549.77	0.00	0.00	0.00
12,000.00	89.86	359.57	7,346.67	4,650.15	33.96	4,649.77	0.00	0.00	0.00
12,100.00	89.86	359.57	7,346.92	4,750.15	33.20	4,749.77	0.00	0.00	0.00
12,131.43	89.86	359.57	7,347.00	4,781.58	32.96	4,781.20	0.00	0.00	0.00
<b>TD Well @ 12131.43ft</b>									

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well NORDEN 2N-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Site:</b>	1N-67W-14 Norden 15-14HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	NORDEN 2N-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Design Targets										
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
- Shape										
NORDEN 2N-14HZ_SHI - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	14,543,160.76	1,680,907.82	40.045022	-104.855320	
NORDEN 2N-14HZ_Har - plan hits target center - Polygon	0.00	0.00	0.00	0.00	0.00	14,543,160.76	1,680,907.82	40.045022	-104.855320	
Point 1			0.00	5,687.55	119.52	14,548,848.49	1,681,018.10			
Point 2			0.00	4,826.54	129.62	14,547,987.50	1,681,029.60			
Point 3			0.00	2,195.02	138.64	14,545,356.00	1,681,042.89			
Point 4			0.00	1,328.01	140.44	14,544,488.99	1,681,046.10			
Point 5			0.00	408.01	141.54	14,543,568.99	1,681,048.70			
Point 6			0.00	-21.79	141.54	14,543,139.20	1,681,049.40			
Point 7			0.00	-14.64	-258.45	14,543,145.70	1,680,649.39			
Point 8			0.00	406.66	-259.26	14,543,566.99	1,680,647.90			
Point 9			0.00	2,195.77	-262.76	14,545,356.10	1,680,641.49			
Point 10			0.00	4,826.39	-275.98	14,547,986.69	1,680,624.00			
Point 11			0.00	5,687.71	-283.98	14,548,848.00	1,680,614.60			
Point 12			0.00	5,687.55	119.52	14,548,848.49	1,681,018.10			
1N-R67W-Sec. 14_Secti - plan misses target center by 6002.73usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E) - Polygon	0.00	0.00	-39.00	-5,412.86	-2,594.66	14,537,743.70	1,678,321.96	40.030157	-104.864589	
Point 1			-39.00	10,240.97	-771.13	14,547,983.39	1,677,534.19			
Point 2			-39.00	10,241.68	1,854.89	14,547,988.37	1,680,160.21			
Point 3			-39.00	10,251.55	4,492.80	14,548,002.53	1,682,798.10			
Point 4			-39.00	4,901.92	4,512.15	14,542,652.94	1,682,826.14			
Point 5			-39.00	4,948.86	1,873.61	14,542,695.59	1,680,187.53			
Point 6			-39.00	4,981.70	-753.18	14,542,724.16	1,677,560.69			
Point 7			-39.00	7,611.26	-762.09	14,545,353.70	1,677,547.51			
NORDEN 2N-14HZ_Bot - plan hits target center - Point	0.00	0.00	7,347.00	4,781.58	32.96	14,547,942.38	1,680,933.01	40.058153	-104.855202	

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,817.83	1,800.00	9 5/8"	9-5/8	13-1/2	
7,718.90	7,336.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,336.52	1,326.00	Fox Hills			
4,549.11	4,528.00	Sussex			
7,239.38	7,162.70	Sharon Springs			
7,277.04	7,187.70	Niobrara Top			
7,567.05	7,317.60	Niobrara B Bench			

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well NORDEN 2N-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4968.00usft (Drilling Rig)
<b>Site:</b>	1N-67W-14 Norden 15-14HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	NORDEN 2N-14HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
200.00	200.00	0.00	0.00	Begin Nudge @ 200.00ft
866.67	863.29	-56.05	15.02	End Nudge @ 866.67ft
1,866.67	1,848.10	-223.78	59.96	Begin Drop @ 1866.67ft
2,366.67	2,345.56	-265.82	71.23	End Drop @ 2366.67ft
6,720.49	6,699.38	-265.82	71.23	KOP @ 6720.49ft
7,300.00	7,202.11	-19.78	69.36	DLS = 9°/100'
7,718.90	7,336.00	369.19	66.41	End Build @ 7718.90ft
12,131.43	7,347.00	4,781.58	32.96	TD Well @ 12131.43ft