

**WELL DETAILS: Norden 2C-14HZ**

GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)	4951.00
Northing 14543161.08	Easting 1680877.88
Latitude 40.0450230	Longitude -104.8554270

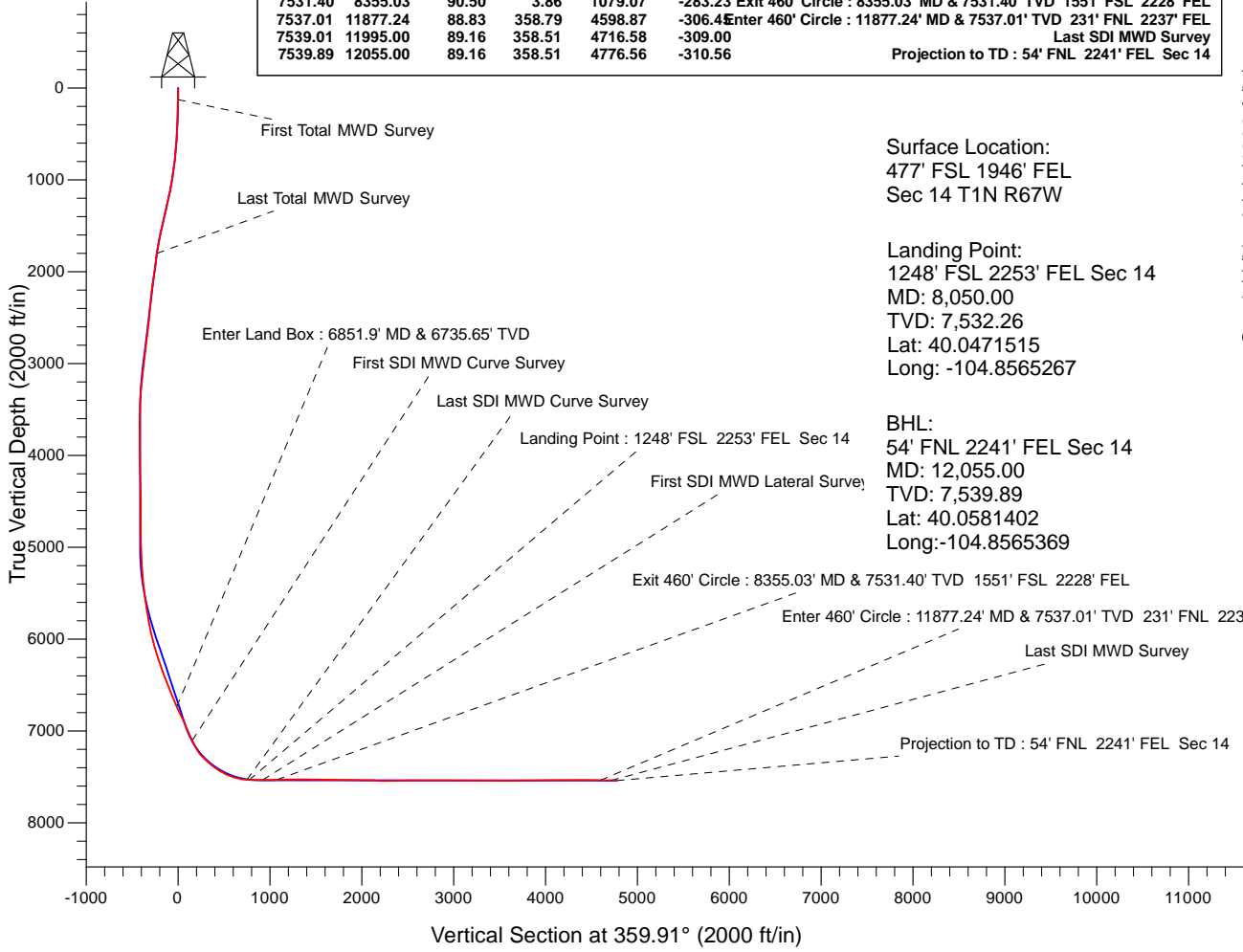
Design: OH (Norden 2C-14HZ/OH)
Created By: Seth Burstad Date: 9-28-2017

**PROJECT DETAILS: US Rockies Wattenberg Planning UTM83**

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Zone 13N (108 W to 102 W)
System Datum: Mean Sea Level
Local North: True

**ANNOTATIONS**

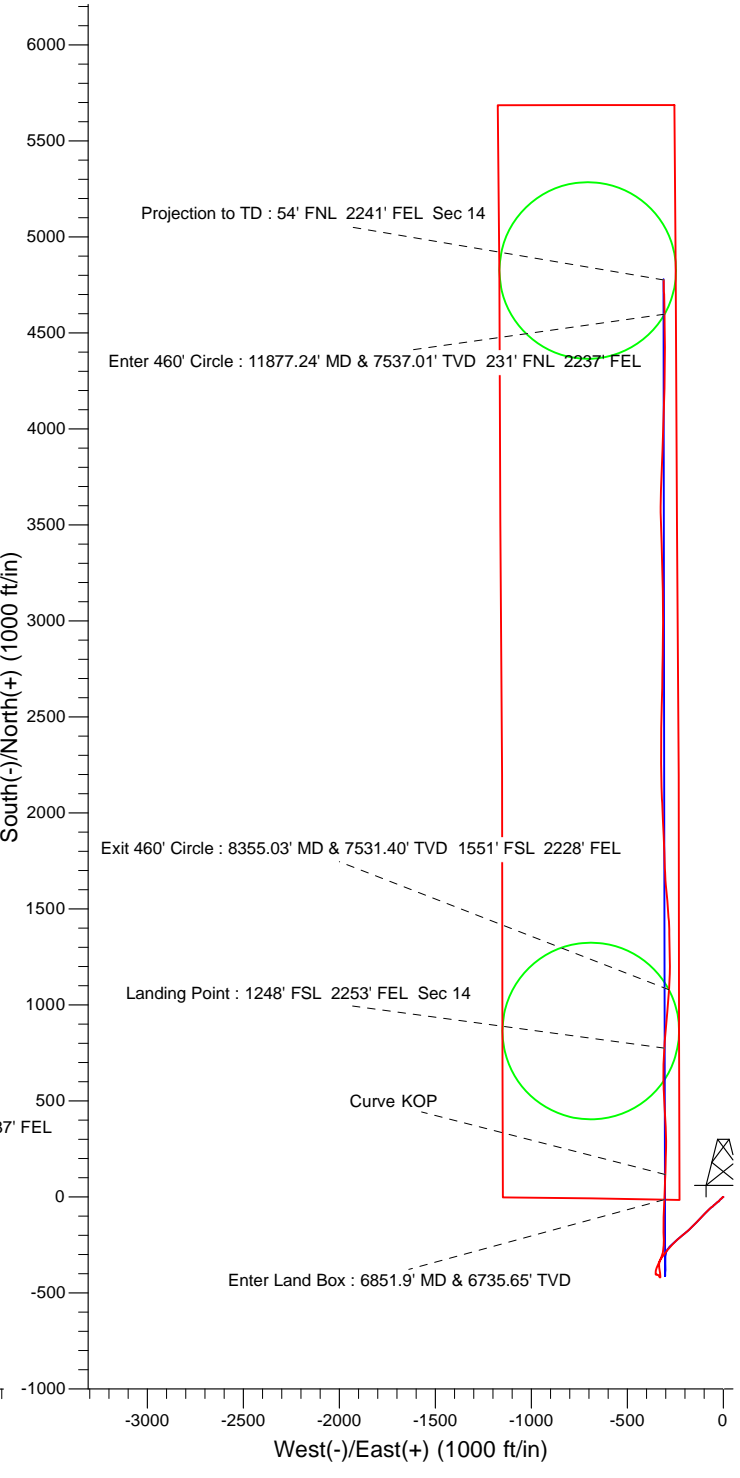
TVD	MD	Inc	Azi	+N/-S	+E/-W	Annotation
126.00	126.00	0.48	272.95	0.03	-0.53	First Total MWD Survey
1801.04	1844.00	11.47	228.03	-229.15	-247.29	Last Total MWD Survey
6735.65	6851.90	23.62	0.61	-13.61	-307.19	Enter Land Box : 6851.9' MD & 6735.65' TVD
7025.47	7170.00	24.15	3.10	117.28	-302.63	Curve KOP
7103.33	7256.00	26.23	2.44	153.73	-300.59	First SDI MWD Curve Survey
7530.87	8025.00	85.79	2.87	750.14	-309.15	Last SDI MWD Curve Survey
7532.26	8050.00	87.82	3.46	775.06	-307.77	Landing Point : 1248' FSL 2253' FEL Sec 14
7532.87	8196.00	90.57	5.23	920.58	-296.18	First SDI MWD Lateral Survey
7531.40	8355.03	90.50	3.86	1079.07	-283.23	Exit 460' Circle : 8355.03' MD & 7531.40' TVD 1551' FSL 2228' FEL
7537.01	11877.24	88.83	358.79	4598.87	-306.4	Enter 460' Circle : 11877.24' MD & 7537.01' TVD 231' FNL 2237' FEL
7539.01	11995.00	89.16	358.51	4716.58	-309.00	Last SDI MWD Survey
7539.89	12055.00	89.16	358.51	4776.56	-310.56	Projection to TD : 54' FNL 2241' FEL Sec 14



**Surface Location:**  
 477' FSL 1946' FEL  
 Sec 14 T1N R67W

**Landing Point:**  
 1248' FSL 2253' FEL Sec 14  
 MD: 8,050.00  
 TVD: 7,532.26  
 Lat: 40.0471515  
 Long: -104.8565267

**BHL:**  
 54' FNL 2241' FEL Sec 14  
 MD: 12,055.00  
 TVD: 7,539.89  
 Lat: 40.0581402  
 Long: -104.8565369





# US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Norden 15-14HZ Pad

Norden 2C-14HZ

OH

Design: OH

## Standard Survey Report

28 September, 2017



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Norden 2C-14HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Site:</b>	Norden 15-14HZ Pad	<b>MD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Well:</b>	Norden 2C-14HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

<b>Project</b>	US Rockies Wattenberg Planning UTM83		
<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>	Norden 15-14HZ Pad, Site Center : Norden 26N-14HZ				
<b>Site Position:</b>		<b>Northing:</b>	14,543,160.20 usft	<b>Latitude:</b>	40.0450200
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,681,012.77 usft	<b>Longitude:</b>	-104.8549450
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.09 °

<b>Well</b>	Norden 2C-14HZ, 477' FSL 1946' FEL Sec 14 T1N R67W					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,543,161.07 usft	<b>Latitude:</b>	40.0450230
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,680,877.87 usft	<b>Longitude:</b>	-104.8554270
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft	<b>Ground Level:</b>	4,951.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	8/3/2017	8.33	66.47	52,213

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	359.91	

<b>Survey Program</b>	<b>Date</b>	9/28/2017			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
126.00	1,844.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
1,909.00	12,055.00	Survey #2 - Intermediate / Production (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
126.00	0.48	272.95	126.00	0.03	-0.53	0.03	0.38	0.38	0.00	
<b>First Total MWD Survey</b>										
158.00	1.14	249.04	158.00	-0.08	-0.96	-0.08	2.27	2.06	-74.72	
189.00	1.93	245.44	188.98	-0.41	-1.72	-0.40	2.57	2.55	-11.61	
221.00	2.46	241.57	220.96	-0.96	-2.82	-0.95	1.72	1.66	-12.09	
253.00	2.46	229.79	252.93	-1.73	-3.94	-1.72	1.58	0.00	-36.81	
284.00	2.77	224.96	283.90	-2.69	-4.98	-2.68	1.23	1.00	-15.58	
316.00	3.08	217.93	315.86	-3.91	-6.06	-3.90	1.48	0.97	-21.97	
348.00	3.47	222.41	347.80	-5.31	-7.24	-5.29	1.46	1.22	14.00	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Norden 2C-14HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Site:</b>	Norden 15-14HZ Pad	<b>MD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Well:</b>	Norden 2C-14HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
380.00	3.34	232.34	379.75	-6.59	-8.63	-6.58	1.88	-0.41	31.03	
443.00	3.34	229.09	442.64	-8.91	-11.47	-8.90	0.30	0.00	-5.16	
475.00	3.78	224.96	474.58	-10.27	-12.92	-10.25	1.59	1.38	-12.91	
507.00	4.35	218.81	506.50	-11.96	-14.42	-11.94	2.24	1.78	-19.22	
539.00	5.01	223.99	538.39	-13.91	-16.15	-13.89	2.45	2.06	16.19	
569.00	5.58	224.87	568.26	-15.89	-18.09	-15.86	1.92	1.90	2.93	
601.00	6.37	220.21	600.09	-18.35	-20.34	-18.32	2.90	2.47	-14.56	
633.00	6.86	226.28	631.88	-21.02	-22.86	-20.99	2.67	1.53	18.97	
665.00	7.43	236.12	663.63	-23.50	-25.96	-23.46	4.21	1.78	30.75	
696.00	8.04	232.25	694.35	-25.94	-29.34	-25.90	2.59	1.97	-12.48	
728.00	8.61	230.50	726.01	-28.84	-32.96	-28.79	1.95	1.78	-5.47	
791.00	9.80	228.65	788.20	-35.38	-40.62	-35.32	1.95	1.89	-2.94	
823.00	10.41	230.32	819.70	-39.02	-44.89	-38.95	2.11	1.91	5.22	
854.00	11.07	226.98	850.16	-42.84	-49.22	-42.77	2.93	2.13	-10.77	
886.00	12.00	228.56	881.51	-47.14	-53.96	-47.06	3.07	2.91	4.94	
918.00	12.61	230.06	912.78	-51.59	-59.14	-51.49	2.15	1.91	4.69	
949.00	12.61	231.46	943.03	-55.87	-64.38	-55.76	0.99	0.00	4.52	
1,012.00	13.89	227.07	1,004.35	-65.30	-75.29	-65.18	2.58	2.03	-6.97	
1,044.00	14.50	225.66	1,035.38	-70.72	-80.97	-70.59	2.19	1.91	-4.41	
1,076.00	13.89	223.55	1,066.40	-76.30	-86.48	-76.17	2.50	-1.91	-6.59	
1,107.00	14.33	220.83	1,096.46	-81.90	-91.56	-81.76	2.57	1.42	-8.77	
1,139.00	15.51	224.34	1,127.39	-87.96	-97.14	-87.81	4.64	3.69	10.97	
1,171.00	17.01	224.69	1,158.10	-94.35	-103.42	-94.18	4.70	4.69	1.09	
1,202.00	17.62	224.96	1,187.70	-100.89	-109.92	-100.72	1.98	1.97	0.87	
1,234.00	17.62	223.73	1,218.20	-107.82	-116.69	-107.63	1.16	0.00	-3.84	
1,266.00	17.09	223.29	1,248.74	-114.74	-123.26	-114.55	1.71	-1.66	-1.38	
1,297.00	16.52	223.90	1,278.42	-121.23	-129.44	-121.03	1.92	-1.84	1.97	
1,329.00	16.83	224.52	1,309.07	-127.81	-135.85	-127.60	1.12	0.97	1.94	
1,361.00	17.58	226.45	1,339.64	-134.44	-142.60	-134.22	2.95	2.34	6.03	
1,392.00	18.11	225.84	1,369.15	-141.03	-149.45	-140.79	1.81	1.71	-1.97	
1,424.00	18.28	224.52	1,399.55	-148.07	-156.53	-147.82	1.39	0.53	-4.13	
1,456.00	18.76	224.26	1,429.89	-155.33	-163.64	-155.08	1.52	1.50	-0.81	
1,487.00	19.69	224.61	1,459.16	-162.62	-170.79	-162.35	3.02	3.00	1.13	
1,519.00	19.38	226.80	1,489.32	-170.09	-178.45	-169.81	2.48	-0.97	6.84	
1,551.00	19.78	228.12	1,519.47	-177.34	-186.35	-177.05	1.86	1.25	4.13	
1,583.00	19.69	229.88	1,549.59	-184.43	-194.50	-184.13	1.88	-0.28	5.50	
1,614.00	18.76	231.29	1,578.86	-190.91	-202.39	-190.60	3.35	-3.00	4.55	
1,645.00	16.96	229.79	1,608.37	-196.95	-209.73	-196.62	5.99	-5.81	-4.84	
1,677.00	16.39	231.01	1,639.02	-202.81	-216.80	-202.46	2.09	-1.78	3.81	
1,708.00	15.60	230.32	1,668.82	-208.22	-223.41	-207.87	2.62	-2.55	-2.23	
1,740.00	14.06	229.53	1,699.75	-213.49	-229.68	-213.13	4.85	-4.81	-2.47	
1,772.00	13.71	229.62	1,730.82	-218.47	-235.53	-218.10	1.10	-1.09	0.28	
1,804.00	12.96	227.77	1,761.96	-223.34	-241.07	-222.96	2.70	-2.34	-5.78	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Norden 2C-14HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Site:</b>	Norden 15-14HZ Pad	<b>MD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Well:</b>	Norden 2C-14HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,835.00	11.95	225.93	1,792.23	-227.91	-245.95	-227.52	3.50	-3.26	-5.94
1,844.00	11.47	228.03	1,801.04	-229.15	-247.29	-228.76	7.13	-5.33	23.33
<b>Last Total MWD Survey</b>									
1,909.00	10.28	223.98	1,864.87	-237.65	-256.12	-237.25	2.17	-1.83	-6.23
1,983.00	10.99	222.53	1,937.60	-247.60	-265.47	-247.18	1.03	0.96	-1.96
2,069.00	10.79	219.93	2,022.05	-259.81	-276.18	-259.38	0.62	-0.23	-3.02
2,154.00	10.09	220.57	2,105.64	-271.57	-286.13	-271.12	0.83	-0.82	0.75
2,239.00	9.49	220.60	2,189.41	-282.55	-295.53	-282.08	0.71	-0.71	0.04
2,324.00	8.54	217.56	2,273.36	-292.87	-303.94	-292.39	1.25	-1.12	-3.58
2,411.00	6.74	216.71	2,359.58	-302.08	-310.93	-301.59	2.07	-2.07	-0.98
2,498.00	5.93	220.79	2,446.05	-309.58	-316.92	-309.08	1.06	-0.93	4.69
2,584.00	6.88	210.76	2,531.51	-317.37	-322.46	-316.86	1.70	1.10	-11.66
2,669.00	8.01	205.90	2,615.80	-327.07	-327.65	-326.56	1.52	1.33	-5.72
2,753.00	7.36	197.42	2,699.04	-337.47	-331.81	-336.95	1.55	-0.77	-10.10
2,840.00	6.80	189.46	2,785.38	-347.87	-334.33	-347.34	1.30	-0.64	-9.15
2,925.00	6.57	180.62	2,869.81	-357.69	-335.21	-357.17	1.24	-0.27	-10.40
3,010.00	6.97	169.95	2,954.22	-367.64	-334.36	-367.11	1.55	0.47	-12.55
3,095.00	6.26	164.34	3,038.65	-377.18	-332.21	-376.65	1.13	-0.84	-6.60
3,180.00	6.60	169.10	3,123.12	-386.44	-330.04	-385.92	0.74	0.40	5.60
3,265.00	5.71	173.59	3,207.63	-395.43	-328.64	-394.92	1.19	-1.05	5.28
3,350.00	4.20	188.76	3,292.31	-402.71	-328.64	-402.20	2.34	-1.78	17.85
3,436.00	3.40	176.79	3,378.12	-408.37	-328.98	-407.86	1.31	-0.93	-13.92
3,520.00	3.08	172.18	3,461.99	-413.09	-328.53	-412.58	0.49	-0.38	-5.49
3,605.00	1.88	176.95	3,546.91	-416.75	-328.15	-416.23	1.43	-1.41	5.61
3,690.00	0.86	237.41	3,631.88	-418.49	-328.61	-417.97	1.93	-1.20	71.13
3,774.00	0.71	264.11	3,715.88	-418.88	-329.66	-418.36	0.47	-0.18	31.79
3,859.00	0.81	310.07	3,800.87	-418.55	-330.64	-418.03	0.71	0.12	54.07
3,944.00	0.91	325.78	3,885.86	-417.60	-331.48	-417.08	0.30	0.12	18.48
4,028.00	1.22	329.80	3,969.85	-416.28	-332.31	-415.75	0.38	0.37	4.79
4,113.00	1.01	343.75	4,054.83	-414.78	-332.97	-414.25	0.40	-0.25	16.41
4,198.00	1.04	336.58	4,139.82	-413.35	-333.49	-412.82	0.15	0.04	-8.44
4,283.00	1.48	328.39	4,224.80	-411.71	-334.37	-411.18	0.56	0.52	-9.64
4,368.00	1.84	320.22	4,309.76	-409.72	-335.82	-409.19	0.51	0.42	-9.61
4,452.00	1.67	306.57	4,393.72	-407.96	-337.66	-407.43	0.54	-0.20	-16.25
4,537.00	1.89	306.16	4,478.68	-406.39	-339.79	-405.86	0.26	0.26	-0.48
4,622.00	2.04	293.11	4,563.63	-404.97	-342.31	-404.43	0.55	0.18	-15.35
4,708.00	1.92	284.36	4,649.58	-404.01	-345.12	-403.47	0.38	-0.14	-10.17
4,794.00	1.14	252.29	4,735.55	-403.92	-347.33	-403.37	1.31	-0.91	-37.29
4,879.00	1.21	252.06	4,820.53	-404.45	-348.99	-403.90	0.08	0.08	-0.27
4,964.00	0.29	292.43	4,905.52	-404.64	-350.04	-404.09	1.18	-1.08	47.49
5,049.00	1.48	296.95	4,990.51	-404.06	-351.22	-403.51	1.40	1.40	5.32
5,133.00	1.79	8.05	5,074.49	-402.27	-352.00	-401.72	2.28	0.37	84.64
5,219.00	3.76	353.78	5,160.38	-398.14	-352.12	-397.59	2.41	2.29	-16.59
5,304.00	5.69	0.07	5,245.09	-391.15	-352.42	-390.60	2.35	2.27	7.40

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<b>Site:</b>	Norden 15-14HZ Pad	<b>MD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Well:</b>	Norden 2C-14HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,390.00	6.29	16.14	5,330.63	-382.36	-351.10	-381.81	2.06	0.70	18.69
5,475.00	7.09	21.17	5,415.05	-373.00	-347.91	-372.45	1.17	0.94	5.92
5,560.00	7.29	21.05	5,499.38	-363.08	-344.08	-362.53	0.24	0.24	-0.14
5,645.00	7.69	18.69	5,583.65	-352.66	-340.32	-352.12	0.59	0.47	-2.78
5,732.00	9.12	22.85	5,669.72	-340.79	-335.78	-340.26	1.79	1.64	4.78
5,816.00	12.20	28.80	5,752.26	-326.87	-328.91	-326.35	3.89	3.67	7.08
5,848.00	11.88	27.39	5,783.56	-320.98	-325.77	-320.47	1.36	-1.00	-4.41
5,917.00	9.27	22.19	5,851.38	-309.53	-320.40	-309.03	4.02	-3.78	-7.54
6,002.00	11.94	9.36	5,934.93	-294.51	-316.39	-294.01	4.18	3.14	-15.09
6,088.00	14.40	7.95	6,018.66	-275.14	-313.46	-274.64	2.88	2.86	-1.64
6,173.00	18.60	4.33	6,100.15	-251.14	-310.97	-250.65	5.08	4.94	-4.26
6,257.00	19.13	0.77	6,179.64	-224.02	-309.78	-223.53	1.51	0.63	-4.24
6,343.00	17.89	356.61	6,261.19	-196.74	-310.37	-196.25	2.11	-1.44	-4.84
6,428.00	18.99	356.74	6,341.83	-169.90	-311.93	-169.41	1.30	1.29	0.15
6,515.00	19.96	1.27	6,423.85	-140.92	-312.40	-140.43	2.06	1.11	5.21
6,599.00	21.49	2.93	6,502.41	-111.22	-311.30	-110.73	1.95	1.82	1.98
6,684.00	22.44	5.20	6,581.24	-79.51	-309.03	-79.03	1.50	1.12	2.67
6,769.00	23.25	0.34	6,659.58	-46.58	-307.46	-46.09	2.41	0.95	-5.72
6,851.90	23.62	0.61	6,735.65	-13.61	-307.19	-13.13	0.46	0.44	0.33
<b>Enter Land Box : 6851.9' MD &amp; 6735.65' TVD</b>									
6,855.00	23.63	0.62	6,738.49	-12.37	-307.18	-11.88	0.46	0.44	0.32
6,939.00	26.64	2.65	6,814.53	23.29	-306.12	23.77	3.73	3.58	2.42
7,025.00	23.53	2.07	6,892.40	59.71	-304.61	60.19	3.63	-3.62	-0.67
7,110.00	23.03	1.43	6,970.48	93.29	-303.58	93.77	0.66	-0.59	-0.75
7,170.00	24.15	3.10	7,025.47	117.28	-302.63	117.75	2.17	1.87	2.78
<b>Curve KOP</b>									
7,196.00	24.64	3.78	7,049.15	128.00	-301.98	128.47	2.17	1.89	2.61
7,256.00	26.23	2.44	7,103.33	153.73	-300.59	154.20	2.81	2.64	-2.24
<b>First SDI MWD Curve Survey</b>									
7,281.00	26.89	1.92	7,125.69	164.90	-300.17	165.37	2.81	2.66	-2.06
7,366.00	29.59	0.03	7,200.57	205.10	-299.51	205.57	3.35	3.18	-2.22
7,451.00	42.89	1.72	7,268.98	255.23	-298.63	255.69	15.69	15.65	1.99
7,537.00	48.27	357.97	7,329.16	316.60	-298.89	317.07	6.99	6.26	-4.36
7,622.00	52.21	357.76	7,383.51	381.89	-301.33	382.36	4.64	4.64	-0.25
7,707.00	57.56	356.87	7,432.39	451.31	-304.60	451.79	6.35	6.29	-1.05
7,792.00	65.77	357.08	7,472.70	525.96	-308.54	526.45	9.66	9.66	0.25
7,879.00	72.15	358.69	7,503.92	607.06	-311.51	607.55	7.53	7.33	1.85
7,965.00	80.92	1.43	7,523.93	690.61	-311.39	691.10	10.66	10.20	3.19
8,025.00	85.79	2.87	7,530.87	750.14	-309.15	750.63	8.46	8.12	2.40
<b>Last SDI MWD Curve Survey</b>									
8,050.00	87.82	3.46	7,532.26	775.06	-307.77	775.55	8.46	8.12	2.37
<b>Landing Point : 1248' FSL 2253' FEL Sec 14</b>									
8,136.00	90.57	4.92	7,533.47	860.82	-301.49	861.29	3.62	3.20	1.70
8,196.00	90.57	5.23	7,532.87	920.58	-296.18	921.04	0.52	0.00	0.52

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Norden 2C-14HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Site:</b>	Norden 15-14HZ Pad	<b>MD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Well:</b>	Norden 2C-14HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-/S (ft)	+E-/W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>First SDI MWD Lateral Survey</b>									
8,221.00	90.57	5.36	7,532.62	945.47	-293.87	945.93	0.52	0.00	0.52
8,306.00	90.50	4.30	7,531.83	1,030.16	-286.72	1,030.61	1.25	-0.08	-1.25
8,355.03	90.50	3.86	7,531.40	1,079.07	-283.23	1,079.51	0.89	0.00	-0.89
<b>Exit 460' Circle : 8355.03' MD &amp; 7531.40' TVD 1551' FSL 2228' FEL</b>									
8,391.00	90.50	3.54	7,531.09	1,114.96	-280.91	1,115.40	0.89	0.00	-0.89
8,478.00	90.40	359.22	7,530.40	1,201.91	-278.81	1,202.35	4.97	-0.11	-4.97
8,564.00	90.60	359.32	7,529.65	1,287.90	-279.91	1,288.34	0.26	0.23	0.12
8,649.00	90.77	359.07	7,528.64	1,372.89	-281.10	1,373.33	0.36	0.20	-0.29
8,734.00	89.40	355.60	7,528.51	1,457.78	-285.05	1,458.23	4.39	-1.61	-4.08
8,820.00	89.40	355.45	7,529.41	1,543.51	-291.76	1,543.97	0.17	0.00	-0.17
8,905.00	88.86	354.57	7,530.70	1,628.18	-299.15	1,628.65	1.21	-0.64	-1.04
8,990.00	89.03	357.95	7,532.27	1,712.97	-304.70	1,713.45	3.98	0.20	3.98
9,075.00	89.33	357.95	7,533.48	1,797.91	-307.74	1,798.39	0.35	0.35	0.00
9,160.00	89.03	357.88	7,534.70	1,882.84	-310.83	1,883.33	0.36	-0.35	-0.08
9,245.00	88.96	357.47	7,536.19	1,967.76	-314.28	1,968.25	0.49	-0.08	-0.48
9,330.00	89.36	356.51	7,537.44	2,052.63	-318.74	2,053.13	1.22	0.47	-1.13
9,415.00	88.09	359.30	7,539.33	2,137.55	-321.85	2,138.05	3.61	-1.49	3.28
9,501.00	87.93	358.63	7,542.32	2,223.48	-323.40	2,223.98	0.80	-0.19	-0.78
9,586.00	90.37	0.16	7,543.58	2,308.46	-324.30	2,308.96	3.39	2.87	1.80
9,671.00	91.11	1.03	7,542.48	2,393.44	-323.41	2,393.95	1.34	0.87	1.02
9,757.00	91.24	0.83	7,540.72	2,479.41	-322.02	2,479.92	0.28	0.15	-0.23
9,842.00	91.78	1.30	7,538.48	2,564.37	-320.44	2,564.87	0.84	0.64	0.55
9,929.00	89.53	0.78	7,537.48	2,651.34	-318.86	2,651.84	2.65	-2.59	-0.60
10,016.00	89.30	1.37	7,538.37	2,738.32	-317.23	2,738.82	0.73	-0.26	0.68
10,101.00	89.46	0.59	7,539.29	2,823.30	-315.77	2,823.80	0.94	0.19	-0.92
10,187.00	89.40	1.07	7,540.14	2,909.29	-314.53	2,909.78	0.56	-0.07	0.56
10,272.00	89.33	359.67	7,541.09	2,994.28	-313.98	2,994.77	1.65	-0.08	-1.65
10,357.00	89.97	359.76	7,541.61	3,079.28	-314.40	3,079.77	0.76	0.75	0.11
10,443.00	90.03	359.22	7,541.61	3,165.27	-315.17	3,165.77	0.63	0.07	-0.63
10,528.00	90.00	358.17	7,541.58	3,250.25	-317.10	3,250.75	1.24	-0.04	-1.24
10,615.00	90.03	358.58	7,541.56	3,337.22	-319.57	3,337.71	0.47	0.03	0.47
10,700.00	90.10	358.56	7,541.46	3,422.19	-321.69	3,422.69	0.09	0.08	-0.02
10,786.00	90.30	357.70	7,541.16	3,508.14	-324.50	3,508.65	1.03	0.23	-1.00
10,873.00	90.20	0.02	7,540.78	3,595.12	-326.23	3,595.63	2.67	-0.11	2.67
10,958.00	89.83	2.39	7,540.76	3,680.09	-324.44	3,680.60	2.82	-0.44	2.79
11,044.00	90.23	2.23	7,540.72	3,766.02	-320.98	3,766.52	0.50	0.47	-0.19
11,129.00	90.23	1.57	7,540.38	3,850.98	-318.16	3,851.47	0.78	0.00	-0.78
11,214.00	90.50	1.45	7,539.83	3,935.94	-315.92	3,936.44	0.35	0.32	-0.14
11,300.00	91.54	2.56	7,538.30	4,021.88	-312.91	4,022.36	1.77	1.21	1.29
11,385.00	91.54	2.34	7,536.02	4,106.77	-309.28	4,107.25	0.26	0.00	-0.26
11,470.00	91.48	1.55	7,533.78	4,191.69	-306.39	4,192.16	0.93	-0.07	-0.93
11,555.00	89.36	0.40	7,533.16	4,276.67	-304.95	4,277.14	2.84	-2.49	-1.35

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Norden 2C-14HZ
<b>Project:</b>	US Rockies Wattenberg Planning UTM83	<b>TVD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Site:</b>	Norden 15-14HZ Pad	<b>MD Reference:</b>	GL 4951' & KB 17' @ 4968.00ft (Xtreme 24)
<b>Well:</b>	Norden 2C-14HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	Denver Sales Office

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,640.00	89.50	359.94	7,534.00	4,361.66	-304.69	4,362.14	0.57	0.16	-0.54
11,725.00	89.40	0.07	7,534.82	4,446.66	-304.69	4,447.13	0.19	-0.12	0.15
11,810.00	89.20	359.17	7,535.86	4,531.65	-305.25	4,532.12	1.08	-0.24	-1.06
11,877.24	88.83	358.79	7,537.01	4,598.87	-306.45	4,599.34	0.78	-0.55	-0.56
<b>Enter 460' Circle : 11877.24' MD &amp; 7537.01' TVD 231' FNL 2237' FEL</b>									
11,896.00	88.73	358.69	7,537.41	4,617.62	-306.86	4,618.10	0.78	-0.55	-0.56
11,981.00	89.36	358.85	7,538.83	4,702.59	-308.68	4,703.07	0.76	0.74	0.19
11,995.00	89.16	358.51	7,539.01	4,716.58	-309.00	4,717.06	2.82	-1.43	-2.43
<b>Last SDI MWD Survey</b>									
12,055.00	89.16	358.51	7,539.89	4,776.56	-310.56	4,777.04	0.00	0.00	0.00
<b>Projection to TD : 54' FNL 2241' FEL Sec 14</b>									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
126.00	126.00	0.03	-0.53	First Total MWD Survey
1,844.00	1,801.04	-229.15	-247.29	Last Total MWD Survey
6,851.90	6,735.65	-13.61	-307.19	Enter Land Box : 6851.9' MD & 6735.65' TVD
7,170.00	7,025.47	117.28	-302.63	Curve KOP
7,256.00	7,103.33	153.73	-300.59	First SDI MWD Curve Survey
8,025.00	7,530.87	750.14	-309.15	Last SDI MWD Curve Survey
8,050.00	7,532.26	775.06	-307.77	Landing Point : 1248' FSL 2253' FEL Sec 14
8,196.00	7,532.87	920.58	-296.18	First SDI MWD Lateral Survey
8,355.03	7,531.40	1,079.07	-283.23	Exit 460' Circle : 8355.03' MD & 7531.40' TVD 1551' FSL 2228' FEL
11,877.24	7,537.01	4,598.87	-306.45	Enter 460' Circle : 11877.24' MD & 7537.01' TVD 231' FNL 2237' FEL
11,995.00	7,539.01	4,716.58	-309.00	Last SDI MWD Survey
12,055.00	7,539.89	4,776.56	-310.56	Projection to TD : 54' FNL 2241' FEL Sec 14

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_