

WELL DETAILS: Land Fed 34N-32HZ

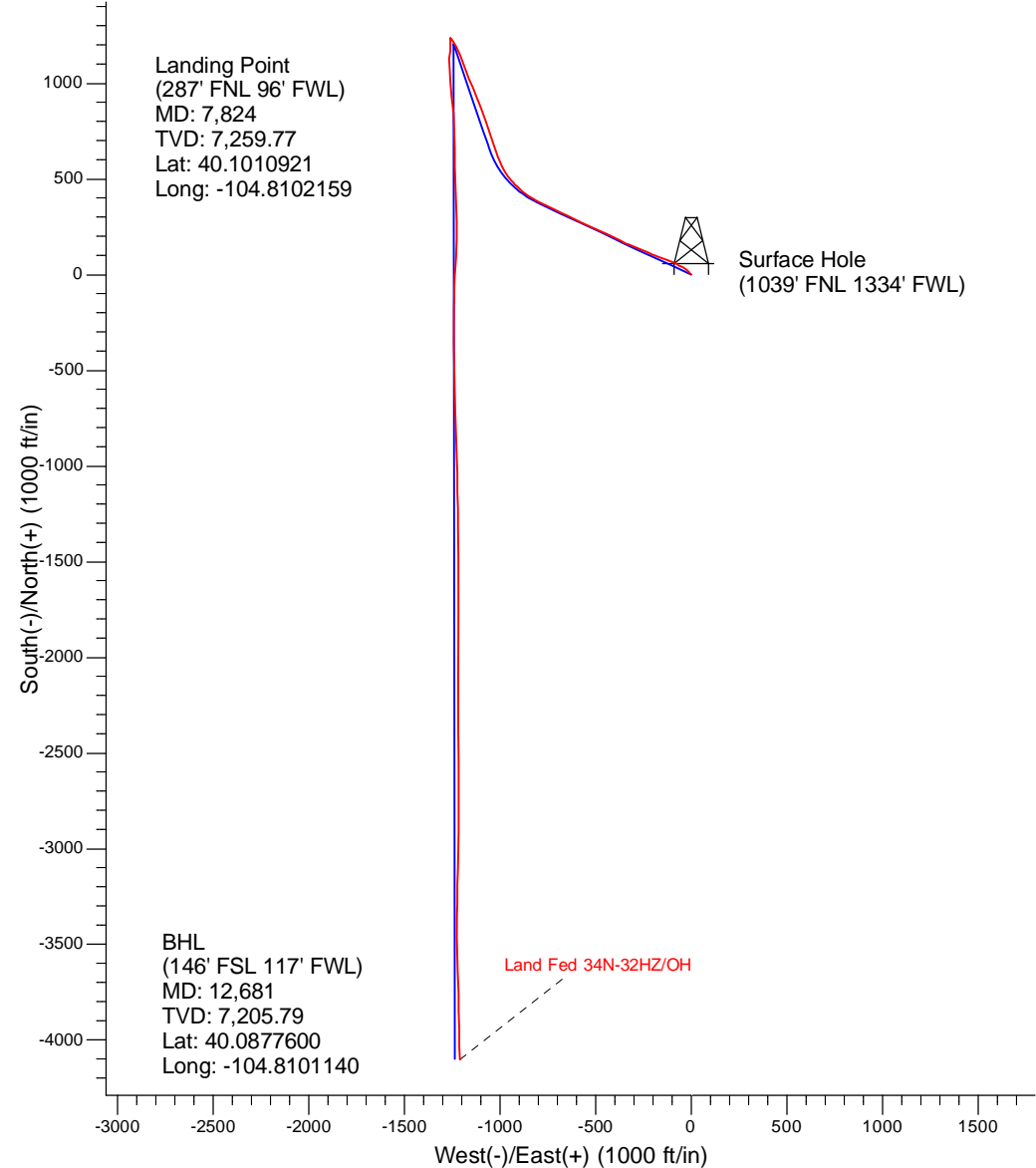
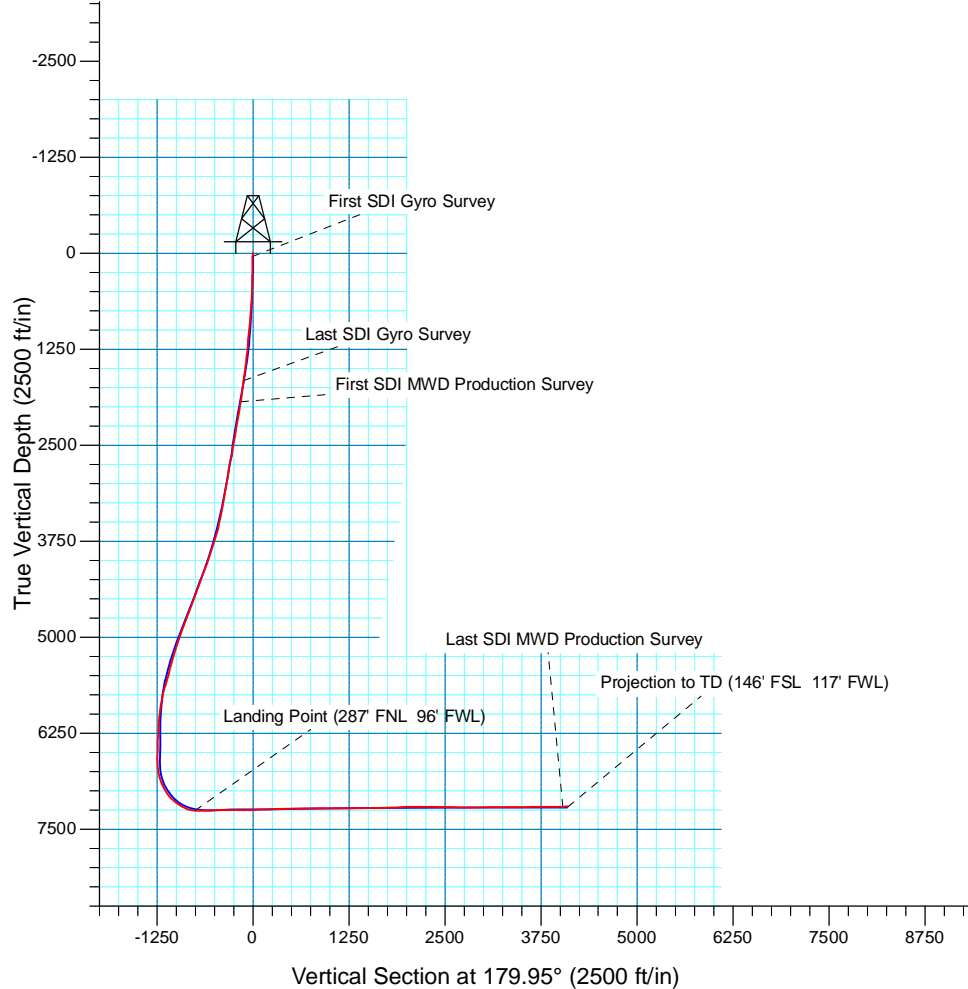
GL 4899' & KB 20' @ 4919.00ft (Precision 461) 4899.00  
 Northing 14562853.17 Easting 1694727.29 Latitude 40.0990280 Longitude -104.8057880

PROJECT DETAILS: US Rockies Wattenberg Planning

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
44.00	44.00	0.36	294.99	0.06	-0.13	First SDI Gyro Survey
1664.93	1697.00	19.28	292.19	117.53	-230.73	Last SDI Gyro Survey
1935.90	1984.00	19.19	292.34	153.35	-318.23	First SDI MWD Production Survey
7259.77	7824.00	86.79	179.97	751.66	-1238.22	Landing Point (287' FNL 96' FWL)
7208.33	12614.00	92.18	178.72	-4036.28	-1211.46	Last SDI MWD Production Survey
7205.79	12681.00	92.18	178.72	-4103.22	-1209.96	Projection to TD (146' FSL 117' FWL)





# **US ROCKIES REGION PLANNING**

**US Rockies Wattenberg Planning**

**Land 18-32HZ Pad 2N-66W-32**

**Land Fed 34N-32HZ**

**OH**

**Design: OH**

## **Standard Survey Report**

**31 May, 2016**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Land Fed 34N-32HZ
<b>Project:</b>	US Rockies Wattenberg Planning	<b>TVD Reference:</b>	GL 4899' & KB 20' @ 4919.00ft (Precision 461)
<b>Site:</b>	Land 18-32HZ Pad 2N-66W-32	<b>MD Reference:</b>	GL 4899' & KB 20' @ 4919.00ft (Precision 461)
<b>Well:</b>	Land Fed 34N-32HZ	<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		
<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>	Land 18-32HZ Pad 2N-66W-32, Site Center: Land Fed 30C-29HZ		
<b>Site Position:</b>		<b>Northing:</b>	14,562,853.50 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,694,712.19 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	40.0990290
		<b>Longitude:</b>	-104.8058420
		<b>Grid Convergence:</b>	0.13 °

<b>Well</b>	Land Fed 34N-32HZ, 1039' FNL 1334' FWL Sec 32 T2N R66W		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Latitude:</b> 40.0990280
	<b>+E/-W</b>	0.00 ft	<b>Longitude:</b> -104.8057880
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft
		<b>Ground Level:</b>	4,899.00 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>
	User Defined	5/20/2016	8.34	66.69	52,584

<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	179.95	

<b>Survey Program</b>	<b>Date</b>	5/31/2016			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
44.00	1,697.00	Survey #1 - Surface (Gyro) (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
1,984.00	12,681.00	Survey #3 - 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 (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
44.00	0.36	294.99	44.00	0.06	-0.13	-0.06	0.82	0.82	0.00	
<b>First SDI Gyro Survey</b>										
75.50	0.26	302.31	75.50	0.14	-0.28	-0.14	0.34	-0.32	23.24	
169.40	0.19	272.86	169.40	0.26	-0.61	-0.26	0.14	-0.07	-31.36	
263.40	0.49	293.27	263.40	0.43	-1.14	-0.43	0.34	0.32	21.71	
357.30	1.99	316.62	357.27	1.77	-2.62	-1.77	1.65	1.60	24.87	
451.20	2.94	314.58	451.08	4.65	-5.46	-4.65	1.02	1.01	-2.17	
545.20	3.19	318.37	544.95	8.29	-8.91	-8.30	0.34	0.27	4.03	
639.10	4.70	316.92	638.62	13.06	-13.28	-13.07	1.61	1.61	-1.54	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Land Fed 34N-32HZ
<b>Project:</b>	US Rockies Wattenberg Planning	<b>TVD Reference:</b>	GL 4899' & KB 20' @ 4919.00ft (Precision 461)
<b>Site:</b>	Land 18-32HZ Pad 2N-66W-32	<b>MD Reference:</b>	GL 4899' & KB 20' @ 4919.00ft (Precision 461)
<b>Well:</b>	Land Fed 34N-32HZ	<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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
733.10	6.38	316.40	732.18	19.65	-19.51	-19.67	1.79	1.79	-0.55
827.00	8.49	310.75	825.29	27.95	-28.36	-27.98	2.38	2.25	-6.02
921.00	10.45	301.92	918.01	36.99	-40.85	-37.03	2.59	2.09	-9.39
1,015.80	11.31	295.13	1,011.11	45.49	-56.57	-45.54	1.63	0.91	-7.16
1,109.10	12.61	297.79	1,102.38	54.12	-73.86	-54.19	1.51	1.39	2.85
1,203.20	14.46	295.35	1,193.86	63.94	-93.57	-64.02	2.06	1.97	-2.59
1,296.70	15.19	289.10	1,284.26	72.95	-115.69	-73.05	1.88	0.78	-6.68
1,390.60	16.54	289.08	1,374.58	81.34	-139.95	-81.46	1.44	1.44	-0.02
1,486.20	18.17	291.04	1,465.82	91.14	-166.73	-91.29	1.81	1.71	2.05
1,581.70	19.58	293.16	1,556.19	102.78	-195.34	-102.95	1.64	1.48	2.22
1,676.20	19.32	292.24	1,645.29	114.93	-224.37	-115.12	0.43	-0.28	-0.97
1,697.00	19.28	292.19	1,664.93	117.53	-230.73	-117.73	0.21	-0.19	-0.24
Last SDI Gyro Survey									
1,984.00	19.19	292.34	1,935.90	153.35	-318.23	-153.63	0.04	-0.03	0.05
First SDI MWD Production Survey									
2,078.00	21.20	296.78	2,024.13	166.88	-347.70	-167.19	2.69	2.14	4.72
2,173.00	22.81	297.76	2,112.20	183.20	-379.33	-183.53	1.74	1.69	1.03
2,268.00	23.30	296.20	2,199.62	200.07	-412.49	-200.43	0.82	0.52	-1.64
2,363.00	23.22	294.94	2,286.89	216.27	-446.32	-216.65	0.53	-0.08	-1.33
2,459.00	22.74	293.72	2,375.28	231.71	-480.47	-232.13	0.70	-0.50	-1.27
2,553.00	22.41	291.59	2,462.07	245.61	-513.77	-246.06	0.94	-0.35	-2.27
2,648.00	22.36	292.76	2,549.92	259.27	-547.27	-259.74	0.47	-0.05	1.23
2,742.00	23.02	296.34	2,636.65	274.34	-580.23	-274.84	1.63	0.70	3.81
2,837.00	23.02	296.89	2,724.08	290.98	-613.44	-291.52	0.23	0.00	0.58
2,931.00	22.26	296.14	2,810.84	307.14	-645.82	-307.70	0.86	-0.81	-0.80
3,025.00	21.68	295.19	2,898.01	322.37	-677.51	-322.96	0.72	-0.62	-1.01
3,120.00	21.18	295.89	2,986.44	337.33	-708.83	-337.95	0.59	-0.53	0.74
3,214.00	21.16	295.44	3,074.10	352.04	-739.43	-352.68	0.17	-0.02	-0.48
3,309.00	20.92	295.57	3,162.76	366.72	-770.21	-367.39	0.26	-0.25	0.14
3,404.00	20.47	296.00	3,251.63	381.33	-800.44	-382.02	0.50	-0.47	0.45
3,498.00	20.14	299.45	3,339.80	396.49	-829.31	-397.21	1.32	-0.35	3.67
3,593.00	19.78	306.12	3,429.10	414.01	-856.54	-414.75	2.43	-0.38	7.02
3,686.00	20.56	309.60	3,516.40	433.69	-881.83	-434.46	1.54	0.84	3.74
3,780.00	21.64	312.51	3,604.10	455.93	-907.33	-456.72	1.60	1.15	3.10
3,874.00	22.23	318.13	3,691.30	480.88	-931.98	-481.70	2.32	0.63	5.98
3,969.00	21.73	323.72	3,779.41	508.45	-954.38	-509.28	2.26	-0.53	5.88
4,064.00	20.69	328.96	3,867.98	537.00	-973.44	-537.85	2.28	-1.09	5.52
4,158.00	20.17	334.92	3,956.08	565.91	-988.88	-566.78	2.28	-0.55	6.34
4,251.00	21.26	338.06	4,043.07	596.08	-1,001.97	-596.95	1.67	1.17	3.38
4,347.00	21.86	340.34	4,132.35	629.05	-1,014.49	-629.94	1.07	0.63	2.38
4,442.00	21.98	341.50	4,220.48	662.57	-1,026.08	-663.46	0.47	0.13	1.22
4,535.00	21.46	340.76	4,306.88	695.13	-1,037.21	-696.04	0.63	-0.56	-0.80
4,631.00	19.50	340.27	4,396.81	726.80	-1,048.41	-727.71	2.05	-2.04	-0.51

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<b>Well:</b>	Land Fed 34N-32HZ	<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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,725.00	20.24	341.28	4,485.21	756.97	-1,058.92	-757.89	0.87	0.79	1.07
4,819.00	21.09	340.22	4,573.16	788.28	-1,069.86	-789.22	0.99	0.90	-1.13
4,914.00	23.03	340.33	4,661.20	821.87	-1,081.90	-822.81	2.04	2.04	0.12
5,007.00	22.79	339.09	4,746.87	855.82	-1,094.46	-856.78	0.58	-0.26	-1.33
5,100.00	21.93	338.52	4,832.87	888.81	-1,107.24	-889.78	0.95	-0.92	-0.61
5,195.00	19.90	337.62	4,921.61	920.27	-1,119.90	-921.25	2.16	-2.14	-0.95
5,289.00	20.17	339.64	5,009.92	950.26	-1,131.63	-951.25	0.79	0.29	2.15
5,382.00	19.84	338.98	5,097.31	980.02	-1,142.87	-981.02	0.43	-0.35	-0.71
5,475.00	18.24	337.61	5,185.22	1,008.21	-1,154.07	-1,009.22	1.79	-1.72	-1.47
5,569.00	17.87	337.61	5,274.59	1,035.15	-1,165.17	-1,036.17	0.39	-0.39	0.00
5,662.00	17.40	338.74	5,363.22	1,061.30	-1,175.65	-1,062.33	0.63	-0.51	1.22
5,756.00	16.01	337.90	5,453.25	1,086.41	-1,185.62	-1,087.45	1.50	-1.48	-0.89
5,850.00	17.48	339.13	5,543.27	1,111.62	-1,195.53	-1,112.66	1.61	1.56	1.31
5,944.00	17.14	339.93	5,633.01	1,137.82	-1,205.31	-1,138.87	0.44	-0.36	0.85
6,038.00	13.87	336.31	5,723.58	1,161.15	-1,214.59	-1,162.21	3.63	-3.48	-3.85
6,132.00	11.77	335.69	5,815.23	1,180.21	-1,223.07	-1,181.28	2.24	-2.23	-0.66
6,226.00	9.65	332.54	5,907.59	1,195.94	-1,230.65	-1,197.01	2.34	-2.26	-3.35
6,320.00	7.69	328.98	6,000.51	1,208.32	-1,237.52	-1,209.40	2.16	-2.09	-3.79
6,414.00	6.41	329.49	6,093.80	1,218.23	-1,243.43	-1,219.32	1.36	-1.36	0.54
6,509.00	4.75	321.05	6,188.34	1,225.86	-1,248.59	-1,226.95	1.94	-1.75	-8.88
6,604.00	3.68	322.01	6,283.09	1,231.32	-1,252.94	-1,232.41	1.13	-1.13	1.01
6,699.00	1.85	306.16	6,377.97	1,234.63	-1,256.06	-1,235.73	2.07	-1.93	-16.68
6,793.00	1.36	294.87	6,471.94	1,235.99	-1,258.29	-1,237.09	0.62	-0.52	-12.01
6,888.00	1.22	312.16	6,566.91	1,237.15	-1,260.07	-1,238.25	0.43	-0.15	18.20
6,982.00	0.82	125.57	6,660.91	1,237.43	-1,260.26	-1,238.53	2.17	-0.43	184.48
7,077.00	10.66	177.26	6,755.33	1,228.23	-1,259.29	-1,229.33	10.71	10.36	54.41
7,170.00	17.34	180.00	6,845.52	1,205.76	-1,258.87	-1,206.85	7.22	7.18	2.95
7,263.00	25.17	188.79	6,932.15	1,172.29	-1,261.90	-1,173.39	9.07	8.42	9.45
7,356.00	29.96	180.63	7,014.59	1,129.49	-1,265.18	-1,130.59	6.55	5.15	-8.77
7,450.00	42.58	176.19	7,090.24	1,074.05	-1,263.32	-1,075.15	13.71	13.43	-4.72
7,542.00	53.12	177.65	7,151.89	1,006.04	-1,259.73	-1,007.14	11.52	11.46	1.59
7,637.00	58.46	173.42	7,205.30	927.78	-1,253.53	-928.87	6.72	5.62	-4.45
7,730.00	73.08	173.16	7,243.37	843.78	-1,243.64	-844.87	15.72	15.72	-0.28
7,824.00	86.79	179.97	7,259.77	751.66	-1,238.22	-752.74	16.23	14.59	7.24
Landing Point (287' FNL 96' FWL)									
7,918.00	91.51	178.38	7,261.17	657.71	-1,236.87	-658.79	5.30	5.02	-1.69
8,012.00	91.64	178.39	7,258.58	563.79	-1,234.22	-564.86	0.14	0.14	0.01
8,107.00	90.57	178.45	7,256.75	468.84	-1,231.60	-469.92	1.13	-1.13	0.06
8,203.00	91.31	177.81	7,255.18	372.91	-1,228.47	-373.98	1.02	0.77	-0.67
8,297.00	91.51	179.27	7,252.86	278.97	-1,226.08	-280.04	1.57	0.21	1.55
8,392.00	88.82	181.87	7,252.59	183.99	-1,227.02	-185.06	3.94	-2.83	2.74
8,486.00	89.36	182.52	7,254.08	90.07	-1,230.62	-91.15	0.90	0.57	0.69
8,581.00	92.14	183.30	7,252.84	-4.79	-1,235.44	3.71	3.04	2.93	0.82
8,676.00	92.58	181.61	7,248.93	-99.62	-1,239.51	98.53	1.84	0.46	-1.78

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<b>Site:</b>	Land 18-32HZ Pad 2N-66W-32	<b>MD Reference:</b>	GL 4899' & KB 20' @ 4919.00ft (Precision 461)
<b>Well:</b>	Land Fed 34N-32HZ	<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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,770.00	90.07	179.52	7,246.75	-193.57	-1,240.43	192.49	3.47	-2.67	-2.22
8,865.00	91.10	179.89	7,245.78	-288.57	-1,239.95	287.48	1.15	1.08	0.39
8,957.00	93.15	180.59	7,242.37	-380.50	-1,240.33	379.41	2.35	2.23	0.76
9,051.00	93.28	178.94	7,237.10	-474.34	-1,239.95	473.26	1.76	0.14	-1.76
9,146.00	91.17	178.74	7,233.41	-569.25	-1,238.02	568.17	2.23	-2.22	-0.21
9,240.00	90.10	178.79	7,232.37	-663.22	-1,236.00	662.14	1.14	-1.14	0.05
9,335.00	90.33	178.81	7,232.01	-758.20	-1,234.01	757.12	0.24	0.24	0.02
9,429.00	90.27	177.46	7,231.52	-852.14	-1,230.95	851.07	1.44	-0.06	-1.44
9,522.00	90.27	178.12	7,231.08	-945.07	-1,227.36	944.00	0.71	0.00	0.71
9,616.00	90.91	178.18	7,230.12	-1,039.02	-1,224.33	1,037.95	0.68	0.68	0.06
9,709.00	90.57	179.07	7,228.92	-1,131.98	-1,222.10	1,130.92	1.02	-0.37	0.96
9,805.00	89.87	179.27	7,228.55	-1,227.97	-1,220.71	1,226.91	0.76	-0.73	0.21
9,900.00	90.84	179.01	7,227.96	-1,322.96	-1,219.28	1,321.89	1.06	1.02	-0.27
9,993.00	90.67	179.33	7,226.73	-1,415.94	-1,217.93	1,414.88	0.39	-0.18	0.34
10,088.00	89.83	180.05	7,226.32	-1,510.94	-1,217.42	1,509.87	1.16	-0.88	0.76
10,182.00	90.57	180.14	7,225.99	-1,604.93	-1,217.58	1,603.87	0.79	0.79	0.10
10,276.00	91.44	179.56	7,224.34	-1,698.92	-1,217.33	1,697.86	1.11	0.93	-0.62
10,369.00	91.37	180.23	7,222.06	-1,791.89	-1,217.16	1,790.83	0.72	-0.08	0.72
10,463.00	91.91	180.07	7,219.37	-1,885.85	-1,217.41	1,884.79	0.60	0.57	-0.17
10,556.00	90.60	180.70	7,217.33	-1,978.82	-1,218.03	1,977.76	1.56	-1.41	0.68
10,649.00	89.83	180.66	7,216.99	-2,071.82	-1,219.13	2,070.75	0.83	-0.83	-0.04
10,742.00	91.71	180.17	7,215.74	-2,164.80	-1,219.81	2,163.74	2.09	2.02	-0.53
10,834.00	90.90	179.98	7,213.64	-2,256.78	-1,219.93	2,255.71	0.90	-0.88	-0.21
10,928.00	89.73	180.09	7,213.12	-2,350.77	-1,219.98	2,349.71	1.25	-1.24	0.12
11,021.00	90.30	179.09	7,213.10	-2,443.77	-1,219.32	2,442.70	1.24	0.61	-1.08
11,115.00	88.52	178.64	7,214.07	-2,537.74	-1,217.46	2,536.68	1.95	-1.89	-0.48
11,208.00	88.89	178.73	7,216.17	-2,630.69	-1,215.32	2,629.63	0.41	0.40	0.10
11,302.00	89.43	180.20	7,217.55	-2,724.68	-1,214.45	2,723.62	1.67	0.57	1.56
11,394.00	89.53	181.28	7,218.38	-2,816.66	-1,215.63	2,815.60	1.18	0.11	1.17
11,489.00	90.77	180.95	7,218.13	-2,911.64	-1,217.48	2,910.58	1.35	1.31	-0.35
11,584.00	91.34	181.24	7,216.38	-3,006.61	-1,219.30	3,005.54	0.67	0.60	0.31
11,677.00	89.13	181.21	7,216.00	-3,099.58	-1,221.29	3,098.51	2.38	-2.38	-0.03
11,769.00	90.44	181.41	7,216.35	-3,191.55	-1,223.39	3,190.49	1.44	1.42	0.22
11,863.00	89.93	180.43	7,216.04	-3,285.54	-1,224.90	3,284.47	1.18	-0.54	-1.04
11,957.00	90.33	180.49	7,215.83	-3,379.54	-1,225.65	3,378.47	0.43	0.43	0.06
12,052.00	90.03	179.58	7,215.53	-3,474.54	-1,225.71	3,473.46	1.01	-0.32	-0.96
12,147.00	90.60	177.93	7,215.01	-3,569.51	-1,223.65	3,568.44	1.84	0.60	-1.74
12,241.00	90.30	178.24	7,214.27	-3,663.45	-1,220.51	3,662.39	0.46	-0.32	0.33
12,336.00	90.91	178.13	7,213.27	-3,758.40	-1,217.50	3,757.33	0.65	0.64	-0.12
12,429.00	90.87	179.19	7,211.82	-3,851.36	-1,215.32	3,850.30	1.14	-0.04	1.14
12,522.00	90.64	178.65	7,210.60	-3,944.34	-1,213.57	3,943.28	0.63	-0.25	-0.58
12,614.00	92.18	178.72	7,208.33	-4,036.28	-1,211.46	4,035.22	1.68	1.67	0.08
Last SDI MWD Production Survey									

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Land Fed 34N-32HZ
<b>Project:</b>	US Rockies Wattenberg Planning	<b>TVD Reference:</b>	GL 4899' & KB 20' @ 4919.00ft (Precision 461)
<b>Site:</b>	Land 18-32HZ Pad 2N-66W-32	<b>MD Reference:</b>	GL 4899' & KB 20' @ 4919.00ft (Precision 461)
<b>Well:</b>	Land Fed 34N-32HZ	<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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,681.00	92.18	178.72	7,205.79	-4,103.22	-1,209.96	4,102.16	0.00	0.00	0.00
Projection to TD (146' FSL 117' FWL)									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
44.00	44.00	0.06	-0.13	First SDI Gyro Survey
1,697.00	1,664.93	117.53	-230.73	Last SDI Gyro Survey
1,984.00	1,935.90	153.35	-318.23	First SDI MWD Production Survey
7,824.00	7,259.77	751.66	-1,238.22	Landing Point (287' FNL 96' FWL)
12,614.00	7,208.33	-4,036.28	-1,211.46	Last SDI MWD Production Survey
12,681.00	7,205.79	-4,103.22	-1,209.96	Projection to TD (146' FSL 117' FWL)

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