

WELL DETAILS: Land Fed 35C-32HZ

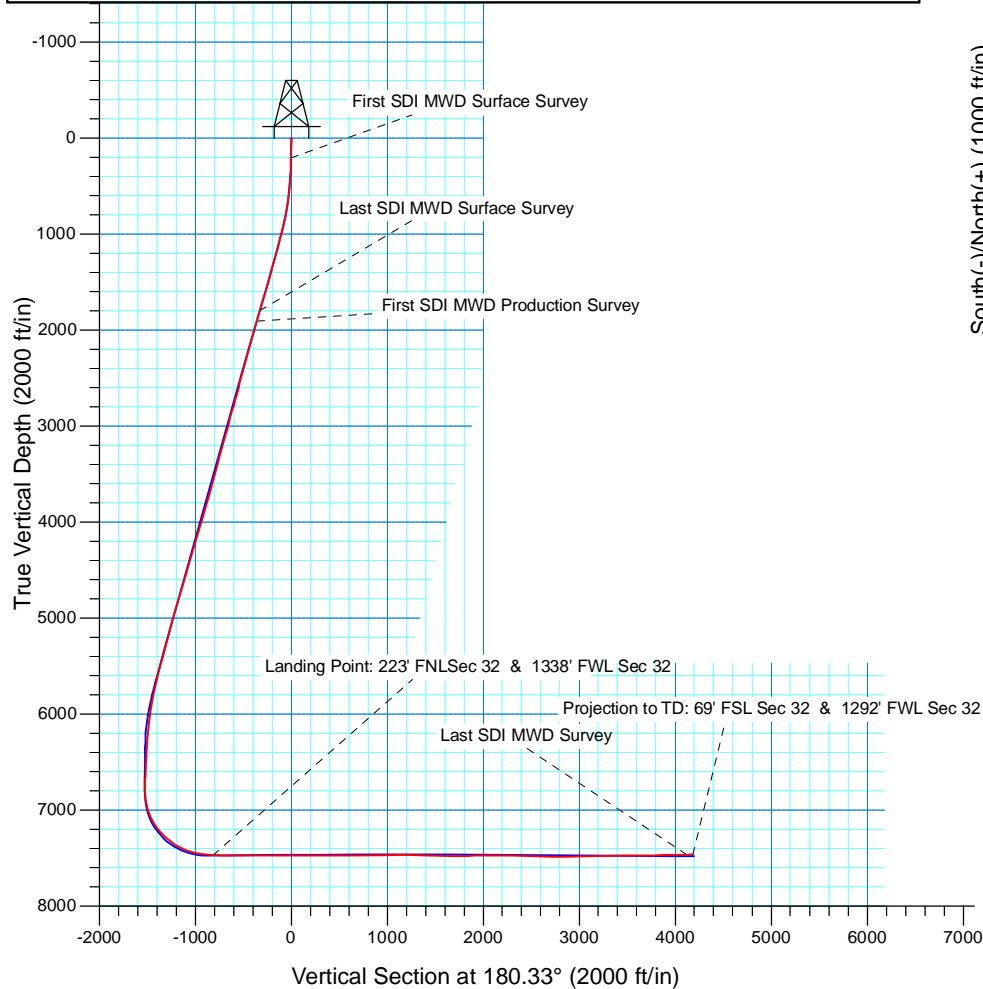
GL 4899' & KB 20' @ 4919.00ft (Precision 461)	4899.00		
Northing	Easting	Latitude	Longitude
14562852.67	1694832.16	40.0990260	-104.8054130

Design: OH (Land Fed 35C-32HZ/OH)

Created By: Seth Burstad Date: 6-30-2016

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Annotation
212.99	213.00	0.88	296.70	0.73	-1.46	First SDI MWD Surface Survey
1801.54	1842.00	16.30	355.08	326.63	-19.44	Last SDI MWD Surface Survey
1911.43	1956.00	14.54	352.49	356.76	-22.68	First SDI MWD Production Survey
7474.53	8086.00	88.49	179.46	816.85	-101.17	Landing Point: 223' FNLSec 32 & 1338' FWL Sec 32
7467.70	13030.00	93.03	179.29	-4125.32	-140.46	Last SDI MWD Survey
7464.79	13085.00	93.03	179.29	-4180.24	-139.78	Projection to TD: 69' FSL Sec 32 & 1292' FWL Sec 32



Landing Point:  
 223' FNLSec 32  
 1338' FWL Sec 32  
 MD: 8,086'  
 TVD: 7,474.53'  
 Lat: 40.1012692  
 Long: -104.8057748

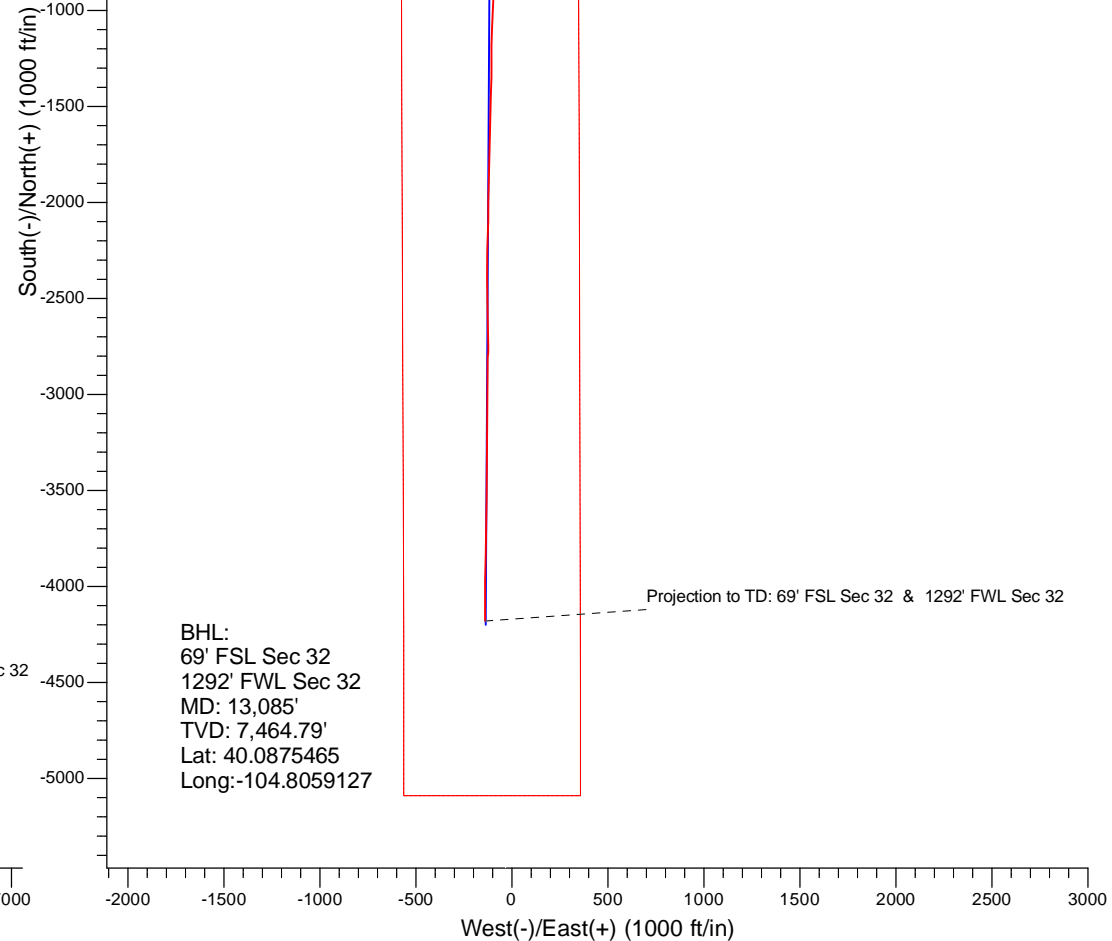
PROJECT DETAILS: US Rockies Wattenberg Planning

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

Landing Point: 223' FNLSec 32 & 1338' FWL Sec 32

Surface Hole:  
 1040' FNL 1439' FWL  
 Sec 32 T2N R66W



BHL:  
 69' FSL Sec 32  
 1292' FWL Sec 32  
 MD: 13,085'  
 TVD: 7,464.79'  
 Lat: 40.0875465  
 Long: -104.8059127



# **US ROCKIES REGION PLANNING**

**US Rockies Wattenberg Planning**

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

**Land Fed 35C-32HZ**

**OH**

**Design: OH**

## **Standard Survey Report**

**30 June, 2016**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Land Fed 35C-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 35C-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)		

Site		Land 18-32HZ Pad 2N-66W-32, Site Center: Land Fed 30C-29HZ			
Site Position:		Northing:	14,562,853.50 usft	Latitude:	40.0990290
From:	Lat/Long	Easting:	1,694,712.19 usft	Longitude:	-104.8058420
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.13 °

Well	Land Fed 35C-32HZ, 1040' FNL 1439' FWL Sec 32 T2N R66W					
Well Position	+N/-S	0.00 ft	Northing:	14,562,852.67 usft	Latitude:	40.0990260
	+E/-W	0.00 ft	Easting:	1,694,832.16 usft	Longitude:	-104.8054130
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,899.00 ft

<b>Wellbore</b>	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	5/19/2016	8.34	66.69	52,581
	User Defined	6/27/2016	8.34	66.71	52,605

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	180.33	

<b>Survey Program</b>	<b>Date</b>	6/30/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
213.00	1,842.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+ Fixed.v2:crustal field declination		
1,956.00	13,085.00	Survey #2 - Production (OH)	APC_ISCWSA REV 2 MWD+ Fixed.v2:crustal field declination		

<b>Survey</b>										
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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
213.00	0.88	296.70	212.99	0.73	-1.46	-0.73	0.41	0.41	0.00	
<b>First SDI MWD Surface Survey</b>										
307.00	1.74	334.28	306.97	2.35	-2.73	-2.33	1.25	0.91	39.98	
401.00	3.13	349.98	400.88	6.16	-3.79	-6.14	1.63	1.48	16.70	
495.00	4.61	357.92	494.67	12.46	-4.38	-12.44	1.67	1.57	8.45	
589.00	5.91	0.08	588.27	21.08	-4.51	-21.05	1.40	1.38	2.30	
683.00	7.93	0.51	681.58	32.40	-4.44	-32.37	2.15	2.15	0.46	

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Land Fed 35C-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 35C-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)
777.00	10.08	0.13	774.41	47.11	-4.36	-47.09	2.29	2.29	-0.40
871.00	12.77	358.89	866.54	65.73	-4.55	-65.70	2.87	2.86	-1.32
965.00	15.09	357.27	957.77	88.34	-5.33	-88.31	2.50	2.47	-1.72
1,059.00	14.94	357.98	1,048.56	112.67	-6.34	-112.63	0.25	-0.16	0.76
1,153.00	15.58	359.16	1,139.25	137.40	-6.95	-137.36	0.76	0.68	1.26
1,247.00	15.10	359.31	1,229.90	162.27	-7.29	-162.22	0.51	-0.51	0.16
1,341.00	14.99	359.34	1,320.68	186.67	-7.57	-186.62	0.12	-0.12	0.03
1,434.00	15.52	355.50	1,410.40	211.10	-8.69	-211.04	1.23	0.57	-4.13
1,528.00	16.19	354.21	1,500.83	236.67	-11.00	-236.61	0.81	0.71	-1.37
1,624.00	17.25	354.46	1,592.77	264.16	-13.72	-264.07	1.11	1.10	0.26
1,719.00	16.73	354.87	1,683.62	291.80	-16.30	-291.70	0.56	-0.55	0.43
1,814.00	16.41	354.79	1,774.67	318.78	-18.74	-318.67	0.34	-0.34	-0.08
1,842.00	16.30	355.08	1,801.54	326.63	-19.44	-326.51	0.49	-0.39	1.04
Last SDI MWD Surface Survey									
1,956.00	14.54	352.49	1,911.43	356.76	-22.68	-356.62	1.66	-1.54	-2.27
First SDI MWD Production Survey									
2,050.00	16.46	357.17	2,002.02	381.76	-24.88	-381.61	2.44	2.04	4.98
2,145.00	14.91	355.84	2,093.48	407.40	-26.44	-407.24	1.67	-1.63	-1.40
2,240.00	16.29	357.50	2,184.97	432.90	-27.90	-432.73	1.53	1.45	1.75
2,335.00	15.13	357.42	2,276.42	458.60	-29.04	-458.42	1.22	-1.22	-0.08
2,430.00	16.16	2.36	2,367.91	484.19	-29.06	-484.02	1.77	1.08	5.20
2,525.00	15.15	3.67	2,459.38	509.79	-27.72	-509.62	1.13	-1.06	1.38
2,620.00	14.27	3.97	2,551.27	533.86	-26.11	-533.70	0.93	-0.93	0.32
2,714.00	15.65	3.69	2,642.08	558.07	-24.49	-557.92	1.47	1.47	-0.30
2,809.00	13.97	2.42	2,733.92	582.32	-23.18	-582.17	1.80	-1.77	-1.34
2,903.00	16.73	1.01	2,824.56	607.19	-22.47	-607.05	2.96	2.94	-1.50
2,997.00	15.57	359.71	2,914.85	633.33	-22.29	-633.19	1.29	-1.23	-1.38
3,092.00	15.02	358.09	3,006.48	658.38	-22.77	-658.24	0.73	-0.58	-1.71
3,186.00	15.56	350.44	3,097.16	682.99	-25.27	-682.83	2.22	0.57	-8.14
3,281.00	15.76	348.11	3,188.64	708.18	-30.04	-708.00	0.69	0.21	-2.45
3,376.00	14.38	350.21	3,280.37	732.43	-34.71	-732.22	1.56	-1.45	2.21
3,470.00	15.44	354.76	3,371.21	756.40	-37.83	-756.17	1.68	1.13	4.84
3,565.00	14.96	355.21	3,462.88	781.21	-40.01	-780.97	0.52	-0.51	0.47
3,657.00	14.79	355.18	3,551.80	804.74	-41.99	-804.49	0.18	-0.18	-0.03
3,752.00	16.01	355.80	3,643.39	829.89	-43.97	-829.63	1.30	1.28	0.65
3,846.00	16.11	357.30	3,733.72	855.85	-45.53	-855.57	0.45	0.11	1.60
3,941.00	16.01	355.59	3,825.01	882.08	-47.16	-881.79	0.51	-0.11	-1.80
4,035.00	15.37	354.55	3,915.51	907.40	-49.34	-907.10	0.74	-0.68	-1.11
4,130.00	16.34	355.03	4,006.89	933.25	-51.69	-932.94	1.03	1.02	0.51
4,223.00	17.69	355.09	4,095.82	960.36	-54.04	-960.03	1.45	1.45	0.06
4,319.00	17.01	353.86	4,187.45	988.85	-56.79	-988.51	0.80	-0.71	-1.28
4,414.00	18.02	356.53	4,278.05	1,017.34	-59.16	-1,016.98	1.36	1.06	2.81
4,507.00	15.30	351.93	4,367.14	1,043.85	-61.76	-1,043.48	3.25	-2.92	-4.95
4,602.00	15.09	355.34	4,458.82	1,068.59	-64.52	-1,068.20	0.97	-0.22	3.59

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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 35C-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)	
4,697.00	16.24	355.39	4,550.29	1,094.15	-66.59	-1,093.75	1.21	1.21	0.05	
4,791.00	16.81	350.63	4,640.41	1,120.67	-69.86	-1,120.25	1.56	0.61	-5.06	
4,886.00	17.12	352.48	4,731.28	1,148.08	-73.93	-1,147.64	0.66	0.33	1.95	
4,979.00	17.75	354.60	4,820.01	1,175.77	-77.06	-1,175.31	0.96	0.68	2.28	
5,072.00	16.64	355.68	4,908.85	1,203.16	-79.39	-1,202.68	1.24	-1.19	1.16	
5,167.00	16.17	355.49	4,999.98	1,229.91	-81.46	-1,229.42	0.50	-0.49	-0.20	
5,261.00	15.00	358.65	5,090.53	1,255.12	-82.77	-1,254.63	1.54	-1.24	3.36	
5,355.00	14.18	358.87	5,181.49	1,278.80	-83.29	-1,278.29	0.87	-0.87	0.23	
5,449.00	15.43	356.53	5,272.37	1,302.79	-84.27	-1,302.28	1.47	1.33	-2.49	
5,542.00	15.29	352.82	5,362.05	1,327.31	-86.55	-1,326.79	1.07	-0.15	-3.99	
5,637.00	14.03	352.92	5,453.96	1,351.16	-89.54	-1,350.62	1.33	-1.33	0.11	
5,733.00	14.26	353.30	5,547.05	1,374.45	-92.35	-1,373.90	0.26	0.24	0.40	
5,828.00	15.17	353.13	5,638.93	1,398.41	-95.20	-1,397.84	0.96	0.96	-0.18	
5,922.00	11.94	358.87	5,730.30	1,420.35	-96.87	-1,419.77	3.72	-3.44	6.11	
6,017.00	11.17	354.30	5,823.38	1,439.34	-97.97	-1,438.75	1.26	-0.81	-4.81	
6,111.00	9.86	355.31	5,915.80	1,456.42	-99.54	-1,455.82	1.41	-1.39	1.07	
6,205.00	8.55	353.18	6,008.59	1,471.38	-101.02	-1,470.77	1.44	-1.39	-2.27	
6,298.00	6.27	348.05	6,100.80	1,483.21	-102.90	-1,482.60	2.55	-2.45	-5.52	
6,392.00	5.33	340.71	6,194.32	1,492.36	-105.40	-1,491.72	1.27	-1.00	-7.81	
6,484.00	4.51	359.20	6,285.99	1,500.01	-106.86	-1,499.37	1.93	-0.89	20.10	
6,578.00	4.14	1.32	6,379.72	1,507.09	-106.84	-1,506.45	0.43	-0.39	2.26	
6,671.00	2.12	5.56	6,472.58	1,512.16	-106.59	-1,511.52	2.18	-2.17	4.56	
6,765.00	2.32	347.05	6,566.51	1,515.75	-106.85	-1,515.11	0.79	0.21	-19.69	
6,859.00	2.80	334.00	6,660.42	1,519.67	-108.29	-1,519.02	0.80	0.51	-13.88	
6,952.00	1.25	278.36	6,753.36	1,521.85	-110.28	-1,521.19	2.51	-1.67	-59.83	
7,046.00	3.07	136.02	6,847.32	1,520.19	-109.55	-1,519.54	4.39	1.94	-151.43	
7,140.00	13.96	165.80	6,940.18	1,507.35	-105.01	-1,506.72	12.12	11.59	31.68	
7,236.00	18.64	176.28	7,032.31	1,480.79	-101.17	-1,480.18	5.74	4.88	10.92	
7,331.00	29.23	176.03	7,119.02	1,442.39	-98.57	-1,441.80	11.15	11.15	-0.26	
7,426.00	37.41	178.99	7,198.34	1,390.31	-96.45	-1,389.73	8.78	8.61	3.12	
7,520.00	45.56	179.72	7,268.70	1,328.10	-95.78	-1,327.52	8.69	8.67	0.78	
7,615.00	52.48	181.89	7,330.97	1,256.44	-96.86	-1,255.86	7.48	7.28	2.28	
7,710.00	61.30	182.67	7,382.81	1,177.01	-100.05	-1,176.41	9.31	9.28	0.82	
7,805.00	66.30	182.91	7,424.74	1,091.90	-104.20	-1,091.28	5.27	5.26	0.25	
7,899.00	79.48	178.39	7,452.35	1,002.29	-105.09	-1,001.66	14.75	14.02	-4.81	
7,993.00	82.40	178.65	7,467.15	909.50	-102.70	-908.89	3.12	3.11	0.28	
8,086.00	88.49	179.46	7,474.53	816.85	-101.17	-816.25	6.61	6.55	0.87	
Landing Point: 223' FNL Sec 32 & 1338' FWL Sec 32										
8,180.00	89.03	178.31	7,476.56	722.89	-99.34	-722.31	1.35	0.57	-1.22	
8,274.00	89.77	178.65	7,477.55	628.93	-96.85	-628.36	0.87	0.79	0.36	
8,368.00	90.30	178.60	7,477.49	534.96	-94.59	-534.40	0.57	0.56	-0.05	
8,463.00	90.81	177.83	7,476.57	440.01	-91.63	-439.47	0.97	0.54	-0.81	
8,557.00	89.73	177.98	7,476.13	346.07	-88.20	-345.56	1.16	-1.15	0.16	

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<b>Well:</b>	Land Fed 35C-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)
8,650.00	91.37	179.79	7,475.23	253.10	-86.39	-252.60	2.63	1.76	1.95
8,744.00	89.73	179.31	7,474.33	159.11	-85.65	-158.62	1.82	-1.74	-0.51
8,838.00	89.90	179.90	7,474.63	65.12	-85.00	-64.63	0.65	0.18	0.63
8,933.00	89.93	179.82	7,474.78	-29.88	-84.77	30.37	0.09	0.03	-0.08
9,028.00	89.36	181.18	7,475.36	-124.87	-85.60	125.36	1.55	-0.60	1.43
9,122.00	89.56	180.90	7,476.25	-218.85	-87.31	219.35	0.37	0.21	-0.30
9,216.00	89.80	180.41	7,476.78	-312.85	-88.38	313.35	0.58	0.26	-0.52
9,311.00	90.60	179.05	7,476.44	-407.84	-87.93	408.34	1.66	0.84	-1.43
9,404.00	90.17	179.68	7,475.82	-500.83	-86.90	501.33	0.82	-0.46	0.68
9,499.00	89.70	181.06	7,475.93	-595.83	-87.51	596.32	1.53	-0.49	1.45
9,593.00	89.80	180.90	7,476.34	-689.81	-89.12	690.32	0.20	0.11	-0.17
9,686.00	89.97	180.35	7,476.52	-782.81	-90.14	783.31	0.62	0.18	-0.59
9,780.00	91.04	182.14	7,475.69	-876.78	-92.18	877.29	2.22	1.14	1.90
9,874.00	91.92	182.82	7,473.27	-970.66	-96.24	971.19	1.18	0.94	0.72
9,968.00	90.74	182.19	7,471.09	-1,064.54	-100.35	1,065.10	1.42	-1.26	-0.67
10,061.00	90.64	182.19	7,469.97	-1,157.46	-103.91	1,158.04	0.11	-0.11	0.00
10,155.00	88.45	179.73	7,470.71	-1,251.43	-105.48	1,252.02	3.50	-2.33	-2.62
10,249.00	88.29	181.30	7,473.39	-1,345.39	-106.33	1,345.98	1.68	-0.17	1.67
10,343.00	88.69	181.17	7,475.86	-1,439.34	-108.35	1,439.94	0.45	0.43	-0.14
10,437.00	88.79	181.57	7,477.93	-1,533.29	-110.60	1,533.90	0.44	0.11	0.43
10,531.00	88.99	181.16	7,479.75	-1,627.24	-112.84	1,627.86	0.49	0.21	-0.44
10,626.00	89.53	181.21	7,480.98	-1,722.21	-114.80	1,722.84	0.57	0.57	0.05
10,720.00	90.60	181.85	7,480.87	-1,816.18	-117.31	1,816.82	1.33	1.14	0.68
10,814.00	90.97	181.12	7,479.58	-1,910.14	-119.75	1,910.79	0.87	0.39	-0.78
10,907.00	90.81	181.26	7,478.14	-2,003.10	-121.68	2,003.77	0.23	-0.17	0.15
11,001.00	91.58	180.85	7,476.18	-2,097.07	-123.41	2,097.74	0.93	0.82	-0.44
11,094.00	90.34	180.60	7,474.62	-2,190.04	-124.58	2,190.73	1.36	-1.33	-0.27
11,187.00	88.42	181.05	7,475.63	-2,283.02	-125.92	2,283.71	2.12	-2.06	0.48
11,280.00	88.28	181.16	7,478.30	-2,375.97	-127.72	2,376.67	0.19	-0.15	0.12
11,372.00	88.46	179.90	7,480.92	-2,467.93	-128.57	2,468.63	1.38	0.20	-1.37
11,466.00	89.13	177.36	7,482.90	-2,561.87	-126.32	2,562.56	2.79	0.71	-2.70
11,559.00	88.12	179.00	7,485.13	-2,654.79	-123.37	2,655.46	2.07	-1.09	1.76
11,653.00	89.29	180.56	7,487.25	-2,748.76	-123.01	2,749.43	2.07	1.24	1.66
11,746.00	91.41	181.99	7,486.69	-2,841.73	-125.07	2,842.40	2.75	2.28	1.54
11,840.00	89.97	179.98	7,485.55	-2,935.70	-126.69	2,936.38	2.63	-1.53	-2.14
11,932.00	90.54	179.93	7,485.15	-3,027.70	-126.62	3,028.38	0.62	0.62	-0.05
12,027.00	91.37	180.07	7,483.56	-3,122.69	-126.62	3,123.36	0.89	0.87	0.15
12,121.00	91.44	181.55	7,481.26	-3,216.65	-127.95	3,217.33	1.58	0.07	1.57
12,215.00	90.40	180.91	7,479.75	-3,310.61	-129.96	3,311.30	1.30	-1.11	-0.68
12,307.00	89.76	180.29	7,479.62	-3,402.61	-130.93	3,403.30	0.97	-0.70	-0.67
12,400.00	90.44	180.82	7,479.46	-3,495.60	-131.83	3,496.30	0.93	0.73	0.57
12,495.00	90.07	180.23	7,479.03	-3,590.59	-132.70	3,591.30	0.73	-0.39	-0.62
12,590.00	90.10	179.72	7,478.89	-3,685.59	-132.66	3,686.30	0.54	0.03	-0.54
12,685.00	92.69	182.05	7,476.58	-3,780.54	-134.12	3,781.25	3.67	2.73	2.45

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well Land Fed 35C-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 35C-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)
12,779.00	91.11	181.67	7,473.46	-3,874.44	-137.17	3,875.16	1.73	-1.68	-0.40
12,967.00	91.04	180.43	7,469.94	-4,062.37	-140.62	4,063.11	0.66	-0.04	-0.66
13,030.00	93.03	179.29	7,467.70	-4,125.32	-140.46	4,126.06	3.64	3.16	-1.81
<b>Last SDI MWD Survey</b>									
13,085.00	93.03	179.29	7,464.79	-4,180.24	-139.78	4,180.98	0.00	0.00	0.00
<b>Projection to TD: 69' FSL Sec 32 &amp; 1292' FWL Sec 32</b>									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
213.00	212.99	0.73	-1.46	First SDI MWD Surface Survey	
1,842.00	1,801.54	326.63	-19.44	Last SDI MWD Surface Survey	
1,956.00	1,911.43	356.76	-22.68	First SDI MWD Production Survey	
8,086.00	7,474.53	816.85	-101.17	Landing Point: 223' FNL Sec 32 & 1338' FWL Sec 32	
13,030.00	7,467.70	-4,125.32	-140.46	Last SDI MWD Survey	
13,085.00	7,464.79	-4,180.24	-139.78	Projection to TD: 69' FSL Sec 32 & 1292' FWL Sec 32	

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