

WELL DETAILS: Hilgers 33N2-22HZ

GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)			5001.00
Northing	Easting	Latitude	Longitude
14601967.84	1645489.54	40.2066030	-104.9818310

Design: OH (Hilgers 33N2-22HZ/OH)

Created By: Seth Burstad Date: 7-17-2017

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

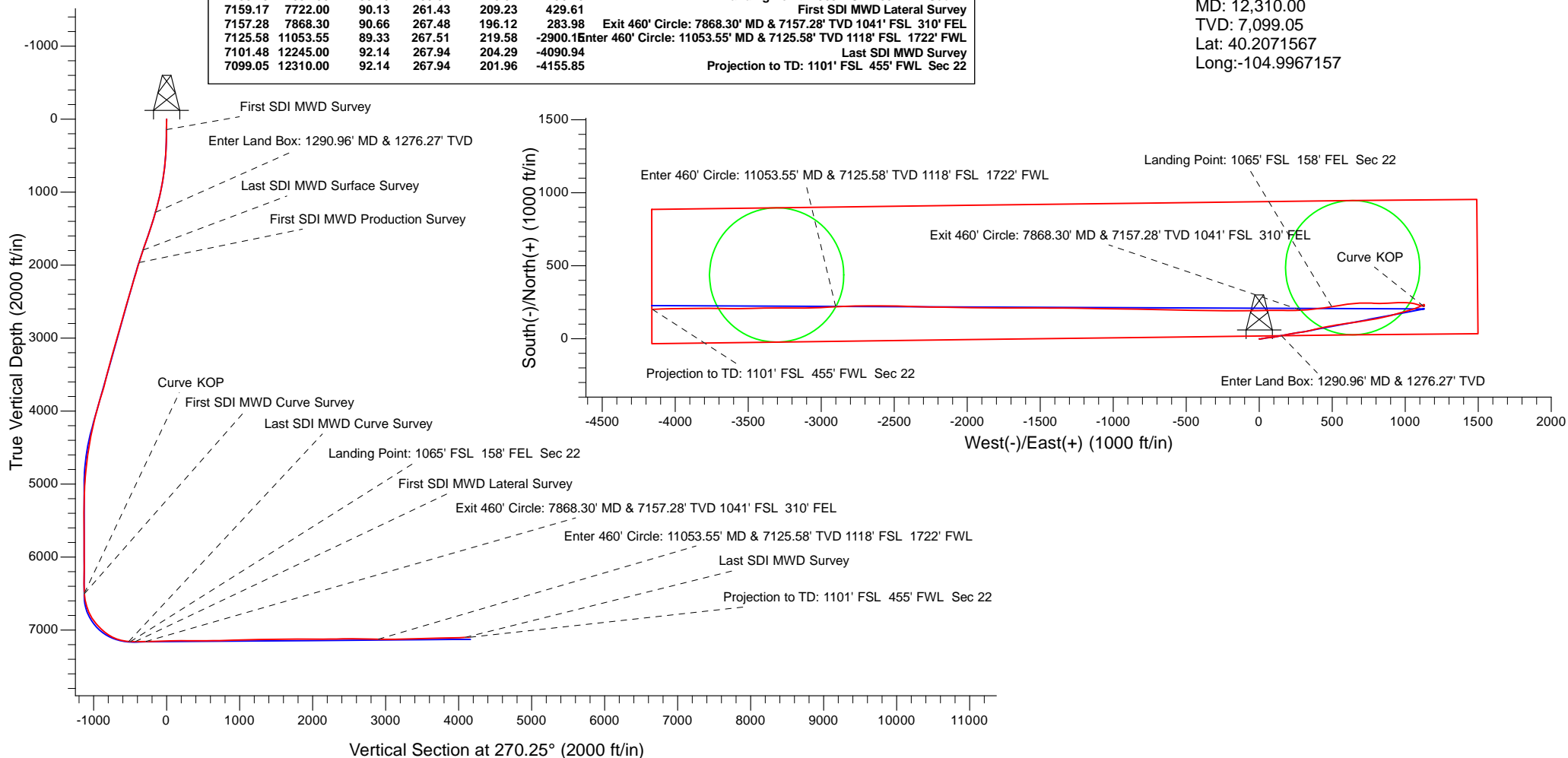
ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Annotation
143.00	143.00	0.29	138.84	-0.27	0.24	First SDI MWD Survey
1276.27	1290.96	15.73	79.54	21.45	152.00	Enter Land Box: 1290.96' MD & 1276.27' TVD
1793.46	1836.00	18.90	78.83	50.94	321.02	Last SDI MWD Surface Survey
1965.28	2017.00	17.76	76.45	63.09	376.62	First SDI MWD Production Survey
6497.71	6651.00	2.48	277.91	221.67	1127.88	Curve KOP
6502.70	6656.00	2.62	278.19	221.70	1127.66	First SDI MWD Curve Survey
7157.37	7633.00	87.55	259.98	223.60	517.41	Last SDI MWD Curve Survey
7158.15	7654.00	88.16	260.32	220.02	496.73	Landing Point: 1065' FSL 158' FEL Sec 22
7159.17	7722.00	90.13	261.43	209.23	429.61	First SDI MWD Lateral Survey
7157.28	7868.30	90.66	267.48	196.12	283.98	Exit 460' Circle: 7868.30' MD & 7157.28' TVD 1041' FSL 310' FEL
7125.58	11053.55	89.33	267.51	219.58	-2900.15	Enter 460' Circle: 11053.55' MD & 7125.58' TVD 1118' FSL 1722' FWL
7101.48	12245.00	92.14	267.94	204.29	-4090.94	Last SDI MWD Survey
7099.05	12310.00	92.14	267.94	201.96	-4155.85	Projection to TD: 1101' FSL 455' FWL Sec 22

Surface Hole:
 854' FSL 640' FEL
 Sec 22 T3N R68W

Landing Point:
 1065' FSL 158' FEL Sec 22
 MD: 7,654.00
 TVD: 7,158.15
 Lat: 40.2072072
 Long: -104.9800519

BHL:
 1101' FSL 455' FWL Sec 22
 MD: 12,310.00
 TVD: 7,099.05
 Lat: 40.2071567
 Long: -104.9967157





US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Hilgers 16-22 Pad

Hilgers 33N2-22HZ

OH

Design: OH

Standard Survey Report

17 July, 2017



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 33N2-22HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 33N2-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

Project	US Rockies Wattenberg Planning UTM83		
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						Hilgers 16-22 Pad, Site Center : Hilgers 7N-34HZ											
Site Position:			Northing:			14,601,968.89 usft			Latitude:			40.2066060					
From:			Lat/Long			Easting:			1,645,309.73 usft			Longitude:			-104.9824750		
Position Uncertainty:			0.00 ft			Slot Radius:			13.200 in			Grid Convergence:			0.01 °		

Well	Hilgers 33N2-22HZ, 854' FSL 640' FEL Sec 22 T3N R68W					
Well Position	+N/-S	0.00 ft	Northing:	14,601,967.84 usft	Latitude:	40.2066030
	+E/-W	0.00 ft	Easting:	1,645,489.54 usft	Longitude:	-104.9818310
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,001.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	5/4/2017	8.49	66.69	52,274

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	270.25	

Survey Program	Date	7/17/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
143.00	1,836.00	Survey #1 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
2,017.00	12,310.00	Survey #2 - Production (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
143.00	0.29	138.84	143.00	-0.27	0.24	-0.24	0.20	0.20	0.00	
First SDI MWD Survey										
230.00	0.97	131.56	229.99	-0.93	0.93	-0.94	0.79	0.78	-8.37	
318.00	1.77	102.09	317.97	-1.71	2.82	-2.83	1.18	0.91	-33.49	
405.00	2.66	81.53	404.90	-1.69	6.13	-6.14	1.36	1.02	-23.63	
494.00	4.28	77.21	493.74	-0.65	11.41	-11.42	1.84	1.82	-4.85	
583.00	5.61	81.32	582.41	0.74	18.95	-18.95	1.55	1.49	4.62	
672.00	6.69	76.84	670.89	2.58	28.30	-28.29	1.33	1.21	-5.03	
760.00	7.77	80.25	758.19	4.75	39.16	-39.13	1.32	1.23	3.88	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 33N2-22HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 33N2-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
847.00	9.75	83.53	844.17	6.58	52.27	-52.24	2.35	2.28	3.77
936.00	11.09	85.57	931.70	8.09	68.30	-68.26	1.56	1.51	2.29
1,022.00	12.55	82.72	1,015.88	9.91	85.81	-85.77	1.83	1.70	-3.31
1,109.00	14.00	81.35	1,100.55	12.69	105.59	-105.54	1.71	1.67	-1.57
1,198.00	15.23	78.24	1,186.67	16.70	127.68	-127.61	1.64	1.38	-3.49
1,287.00	15.67	79.57	1,272.46	21.25	150.95	-150.85	0.63	0.49	1.49
1,290.96	15.73	79.54	1,276.27	21.45	152.00	-151.90	1.44	1.42	-0.73
Enter Land Box: 1290.96' MD & 1276.27' TVD									
1,374.00	16.91	78.98	1,355.96	25.80	174.92	-174.81	1.44	1.43	-0.68
1,460.00	18.21	77.26	1,437.95	31.15	200.31	-200.17	1.63	1.51	-2.00
1,547.00	18.15	80.57	1,520.61	36.37	226.93	-226.77	1.19	-0.07	3.80
1,636.00	19.54	83.46	1,604.84	40.34	255.40	-255.22	1.88	1.56	3.25
1,724.00	19.53	81.60	1,687.78	44.16	284.57	-284.37	0.71	-0.01	-2.11
1,809.00	19.30	77.98	1,767.95	49.16	312.36	-312.15	1.44	-0.27	-4.26
1,836.00	18.90	78.83	1,793.46	50.94	321.02	-320.79	1.80	-1.48	3.15
Last SDI MWD Surface Survey									
2,017.00	17.76	76.45	1,965.28	63.09	376.62	-376.34	0.75	-0.63	-1.31
First SDI MWD Production Survey									
2,105.00	17.43	75.95	2,049.16	69.43	402.45	-402.14	0.41	-0.38	-0.57
2,194.00	17.19	78.68	2,134.13	75.25	428.28	-427.95	0.95	-0.27	3.07
2,283.00	16.89	78.00	2,219.22	80.52	453.82	-453.46	0.40	-0.34	-0.76
2,372.00	16.62	80.51	2,304.44	85.31	479.02	-478.64	0.87	-0.30	2.82
2,460.00	16.37	79.03	2,388.82	89.74	503.61	-503.21	0.56	-0.28	-1.68
2,549.00	17.11	80.45	2,474.05	94.30	528.83	-528.42	0.95	0.83	1.60
2,638.00	16.32	79.82	2,559.29	98.68	554.05	-553.62	0.91	-0.89	-0.71
2,727.00	15.81	80.87	2,644.81	102.82	578.33	-577.88	0.66	-0.57	1.18
2,816.00	16.16	83.29	2,730.37	106.19	602.60	-602.13	0.85	0.39	2.72
2,905.00	14.89	82.68	2,816.12	109.09	626.24	-625.76	1.44	-1.43	-0.69
2,994.00	15.71	81.22	2,901.97	112.39	649.49	-649.00	1.02	0.92	-1.64
3,083.00	16.69	81.51	2,987.44	116.11	674.04	-673.53	1.10	1.10	0.33
3,172.00	16.97	81.93	3,072.62	119.82	699.54	-699.01	0.34	0.31	0.47
3,261.00	15.78	80.26	3,158.01	123.69	724.33	-723.78	1.44	-1.34	-1.88
3,349.00	15.58	81.91	3,242.74	127.38	747.82	-747.26	0.56	-0.23	1.88
3,438.00	15.26	79.79	3,328.53	131.14	771.18	-770.60	0.73	-0.36	-2.38
3,527.00	15.04	78.82	3,414.44	135.45	794.04	-793.44	0.38	-0.25	-1.09
3,616.00	15.06	77.83	3,500.39	140.13	816.67	-816.05	0.29	0.02	-1.11
3,705.00	13.44	76.96	3,586.65	144.90	838.05	-837.41	1.84	-1.82	-0.98
3,793.00	16.39	77.27	3,671.67	149.95	860.13	-859.47	3.35	3.35	0.35
3,882.00	17.85	77.51	3,756.73	155.66	885.70	-885.01	1.64	1.64	0.27
3,971.00	17.54	74.81	3,841.52	162.13	911.96	-911.24	0.99	-0.35	-3.03
4,083.00	16.61	72.91	3,948.58	171.26	943.55	-942.79	0.97	-0.83	-1.70
4,171.00	14.69	71.49	4,033.31	178.49	966.15	-965.36	2.22	-2.18	-1.61
4,260.00	14.64	77.54	4,119.42	184.50	987.83	-987.02	1.72	-0.06	6.80
4,349.00	13.07	75.99	4,205.83	189.37	1,008.58	-1,007.75	1.81	-1.76	-1.74

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Well:	Hilgers 33N2-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
4,437.00	11.83	74.51	4,291.76	194.19	1,026.93	-1,026.07	1.45	-1.41	-1.68
4,615.00	10.40	71.65	4,466.42	204.12	1,059.76	-1,058.86	0.86	-0.80	-1.61
4,704.00	9.04	68.68	4,554.14	209.19	1,073.90	-1,072.98	1.63	-1.53	-3.34
4,792.00	7.94	65.43	4,641.17	214.23	1,085.87	-1,084.93	1.36	-1.25	-3.69
4,881.00	7.13	62.68	4,729.40	219.32	1,096.37	-1,095.40	1.00	-0.91	-3.09
5,058.00	5.27	59.16	4,905.36	228.53	1,113.11	-1,112.10	1.07	-1.05	-1.99
5,236.00	2.72	80.42	5,082.92	233.42	1,124.30	-1,123.27	1.63	-1.43	11.94
5,325.00	2.02	72.44	5,171.85	234.25	1,127.87	-1,126.84	0.87	-0.79	-8.97
5,413.00	1.03	134.42	5,259.82	234.16	1,129.92	-1,128.88	2.03	-1.13	70.43
5,502.00	0.88	159.84	5,348.81	232.96	1,130.72	-1,129.70	0.50	-0.17	28.56
5,591.00	0.68	167.77	5,437.80	231.80	1,131.07	-1,130.05	0.25	-0.22	8.91
5,679.00	0.47	198.35	5,525.79	230.95	1,131.07	-1,130.05	0.41	-0.24	34.75
5,768.00	0.93	196.79	5,614.79	229.91	1,130.74	-1,129.73	0.52	0.52	-1.75
5,857.00	0.93	184.75	5,703.77	228.50	1,130.48	-1,129.47	0.22	0.00	-13.53
5,946.00	0.89	176.06	5,792.76	227.09	1,130.46	-1,129.46	0.16	-0.04	-9.76
6,035.00	0.86	172.39	5,881.75	225.74	1,130.60	-1,129.60	0.07	-0.03	-4.12
6,124.00	0.72	192.58	5,970.74	224.53	1,130.57	-1,129.58	0.35	-0.16	22.69
6,212.00	0.39	170.89	6,058.74	223.70	1,130.49	-1,129.51	0.44	-0.38	-24.65
6,301.00	0.57	212.47	6,147.74	223.03	1,130.30	-1,129.32	0.43	0.20	46.72
6,390.00	0.36	202.78	6,236.73	222.39	1,129.96	-1,128.98	0.25	-0.24	-10.89
6,478.00	0.27	175.85	6,324.73	221.93	1,129.87	-1,128.89	0.19	-0.10	-30.60
6,567.00	0.24	214.08	6,413.73	221.57	1,129.78	-1,128.80	0.19	-0.03	42.96
6,651.00	2.48	277.91	6,497.71	221.67	1,127.88	-1,126.90	2.84	2.67	75.99
Curve KOP									
6,656.00	2.62	278.19	6,502.70	221.70	1,127.66	-1,126.68	2.84	2.83	5.61
First SDI MWD Curve Survey									
6,745.00	11.90	283.74	6,590.89	224.18	1,116.71	-1,115.72	10.44	10.43	6.24
6,833.00	18.47	289.96	6,675.78	231.10	1,094.77	-1,093.75	7.68	7.47	7.07
6,922.00	24.94	283.68	6,758.43	240.36	1,063.25	-1,062.19	7.71	7.27	-7.06
7,011.00	31.50	275.39	6,836.84	246.99	1,021.80	-1,020.72	8.57	7.37	-9.31
7,100.00	40.47	269.16	6,908.81	248.76	969.65	-968.56	10.87	10.08	-7.00
7,189.00	45.77	264.85	6,973.76	245.47	908.96	-907.88	6.81	5.96	-4.84
7,278.00	52.19	269.32	7,032.16	242.19	841.96	-840.89	8.15	7.21	5.02
7,367.00	59.48	273.62	7,082.13	244.19	768.42	-767.35	9.11	8.19	4.83
7,456.00	69.07	267.24	7,120.74	244.61	688.39	-687.32	12.56	10.78	-7.17
7,544.00	77.66	262.53	7,145.93	237.03	604.53	-603.49	11.02	9.76	-5.35
7,633.00	87.55	259.98	7,157.37	223.60	517.41	-516.43	11.47	11.11	-2.87
Last SDI MWD Curve Survey									
7,654.00	88.16	260.32	7,158.15	220.02	496.73	-495.77	3.33	2.90	1.63
Landing Point: 1065' FSL 158' FEL Sec 22									
7,722.00	90.13	261.43	7,159.17	209.23	429.61	-428.69	3.33	2.90	1.63
First SDI MWD Lateral Survey									
7,811.00	91.14	265.91	7,158.18	199.43	341.18	-340.31	5.16	1.13	5.03
7,868.30	90.66	267.48	7,157.28	196.12	283.98	-283.12	2.86	-0.83	2.74

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Exit 460' Circle: 7868.30' MD & 7157.28' TVD 1041' FSL 310' FEL									
7,900.00	90.40	268.35	7,156.99	194.97	252.31	-251.45	2.86	-0.83	2.74
7,988.00	91.54	270.49	7,155.50	194.08	164.33	-163.48	2.76	1.30	2.43
8,077.00	91.88	269.99	7,152.84	194.45	75.37	-74.52	0.68	0.38	-0.56
8,166.00	92.11	269.11	7,149.74	193.75	-13.57	14.42	1.02	0.26	-0.99
8,255.00	90.44	269.56	7,147.76	192.72	-102.54	103.38	1.94	-1.88	0.51
8,344.00	90.80	269.06	7,146.80	191.65	-191.53	192.36	0.69	0.40	-0.56
8,433.00	89.56	270.62	7,146.52	191.40	-280.52	281.36	2.24	-1.39	1.75
8,522.00	89.87	272.36	7,146.96	193.71	-369.49	370.33	1.99	0.35	1.96
8,611.00	90.10	271.13	7,146.99	196.42	-458.45	459.30	1.41	0.26	-1.38
8,700.00	90.57	270.97	7,146.47	198.06	-547.43	548.29	0.56	0.53	-0.18
8,789.00	90.20	270.13	7,145.87	198.91	-636.42	637.28	1.03	-0.42	-0.94
8,877.00	91.34	271.54	7,144.68	200.19	-724.40	725.27	2.06	1.30	1.60
8,966.00	91.81	271.06	7,142.24	202.21	-813.34	814.22	0.75	0.53	-0.54
9,055.00	92.42	271.06	7,138.95	203.86	-902.27	903.15	0.69	0.69	0.00
9,144.00	91.24	270.89	7,136.11	205.37	-991.21	992.09	1.34	-1.33	-0.19
9,233.00	90.60	270.86	7,134.68	206.73	-1,080.19	1,081.08	0.72	-0.72	-0.03
9,321.00	91.38	271.14	7,133.16	208.26	-1,168.16	1,169.06	0.94	0.89	0.32
9,410.00	92.05	270.53	7,130.50	209.56	-1,257.11	1,258.01	1.02	0.75	-0.69
9,499.00	92.65	270.40	7,126.85	210.28	-1,346.03	1,346.93	0.69	0.67	-0.15
9,588.00	90.17	270.30	7,124.66	210.83	-1,434.99	1,435.90	2.79	-2.79	-0.11
9,677.00	89.66	270.08	7,124.79	211.12	-1,523.99	1,524.90	0.62	-0.57	-0.25
9,766.00	91.01	270.13	7,124.27	211.28	-1,612.99	1,613.90	1.52	1.52	0.06
9,855.00	90.77	269.93	7,122.89	211.33	-1,701.98	1,702.88	0.35	-0.27	-0.22
9,944.00	89.13	270.91	7,122.97	211.98	-1,790.97	1,791.88	2.15	-1.84	1.10
10,033.00	88.86	270.75	7,124.53	213.27	-1,879.95	1,880.86	0.35	-0.30	-0.18
10,122.00	88.86	270.17	7,126.30	213.99	-1,968.93	1,969.84	0.65	0.00	-0.65
10,211.00	90.20	270.71	7,127.03	214.67	-2,057.92	2,058.84	1.62	1.51	0.61
10,299.00	92.21	271.14	7,125.18	216.09	-2,145.88	2,146.81	2.34	2.28	0.49
10,388.00	90.44	271.28	7,123.12	217.97	-2,234.84	2,235.77	1.99	-1.99	0.16
10,477.00	90.23	271.23	7,122.60	219.92	-2,323.81	2,324.75	0.24	-0.24	-0.06
10,566.00	91.01	271.71	7,121.64	222.20	-2,412.78	2,413.73	1.03	0.88	0.54
10,655.00	90.30	271.10	7,120.62	224.38	-2,501.75	2,502.70	1.05	-0.80	-0.69
10,745.00	89.56	270.34	7,120.73	225.51	-2,591.74	2,592.70	1.18	-0.82	-0.84
10,834.00	89.13	269.60	7,121.75	225.47	-2,680.73	2,681.69	0.96	-0.48	-0.83
10,922.00	88.76	268.63	7,123.37	224.11	-2,768.70	2,769.65	1.18	-0.42	-1.10
11,012.00	89.13	267.78	7,125.02	221.29	-2,858.64	2,859.58	1.03	0.41	-0.94
11,053.55	89.33	267.51	7,125.58	219.58	-2,900.15	2,901.08	0.80	0.48	-0.64
Enter 460' Circle: 11053.55' MD & 7125.58' TVD 1118' FSL 1722' FWL									
11,101.00	89.56	267.21	7,126.04	217.40	-2,947.55	2,948.47	0.80	0.48	-0.64
11,190.00	89.66	267.02	7,126.65	212.92	-3,036.44	3,037.34	0.24	0.11	-0.21
11,279.00	90.37	270.40	7,126.62	210.92	-3,125.40	3,126.29	3.88	0.80	3.80
11,368.00	91.11	270.06	7,125.47	211.27	-3,214.39	3,215.28	0.92	0.83	-0.38

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Hilgers 33N2-22HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Site:	Hilgers 16-22 Pad	MD Reference:	GL 5001' & KB 17' @ 5018.00ft (Xtreme 24)
Well:	Hilgers 33N2-22HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
11,456.00	91.68	269.50	7,123.33	210.94	-3,302.36	3,303.25	0.91	0.65	-0.64
11,545.00	92.69	269.32	7,119.94	210.02	-3,391.29	3,392.18	1.15	1.13	-0.20
11,634.00	91.27	268.75	7,116.86	208.52	-3,480.23	3,481.10	1.72	-1.60	-0.64
11,723.00	91.68	269.14	7,114.57	206.88	-3,569.18	3,570.05	0.64	0.46	0.44
11,812.00	91.04	271.49	7,112.46	207.37	-3,658.15	3,659.02	2.74	-0.72	2.64
11,901.00	91.04	270.30	7,110.85	208.76	-3,747.12	3,748.00	1.34	0.00	-1.34
11,990.00	91.41	269.81	7,108.94	208.85	-3,836.10	3,836.97	0.69	0.42	-0.55
12,078.00	91.64	269.07	7,106.60	207.99	-3,924.06	3,924.93	0.88	0.26	-0.84
12,167.00	91.64	268.92	7,104.05	206.43	-4,013.01	4,013.88	0.17	0.00	-0.17
12,245.00	92.14	267.94	7,101.48	204.29	-4,090.94	4,091.79	1.41	0.64	-1.26
Last SDI MWD Survey									
12,310.00	92.14	267.94	7,099.05	201.96	-4,155.85	4,156.69	0.00	0.00	0.00
Projection to TD: 1101' FSL 455' FWL Sec 22									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
143.00	143.00	-0.27	0.24	First SDI MWD Survey
1,290.96	1,276.27	21.45	152.00	Enter Land Box: 1290.96' MD & 1276.27' TVD
1,836.00	1,793.46	50.94	321.02	Last SDI MWD Surface Survey
2,017.00	1,965.28	63.09	376.62	First SDI MWD Production Survey
6,651.00	6,497.71	221.67	1,127.88	Curve KOP
6,656.00	6,502.70	221.70	1,127.66	First SDI MWD Curve Survey
7,633.00	7,157.37	223.60	517.41	Last SDI MWD Curve Survey
7,654.00	7,158.15	220.02	496.73	Landing Point: 1065' FSL 158' FEL Sec 22
7,722.00	7,159.17	209.23	429.61	First SDI MWD Lateral Survey
7,868.30	7,157.28	196.12	283.98	Exit 460' Circle: 7868.30' MD & 7157.28' TVD 1041' FSL 310' FEL
11,053.55	7,125.58	219.58	-2,900.15	Enter 460' Circle: 11053.55' MD & 7125.58' TVD 1118' FSL 1722' FWL
12,245.00	7,101.48	204.29	-4,090.94	Last SDI MWD Survey
12,310.00	7,099.05	201.96	-4,155.85	Projection to TD: 1101' FSL 455' FWL Sec 22

Checked By: _____	Approved By: _____	Date: _____
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