

WELL DETAILS: Jaguar 3N-14HZ

Northing: 14537880.72
 Easting: 1679335.93
 GL 4993' & KB 17' @ 5010.00ft
 Latitude: 40.0305290
 Longitude: -104.8609660
 4993.00

Design: OH (Jaguar 3N-14HZ/OH)

Created By: Seth Burstad Date: 12-22-2016

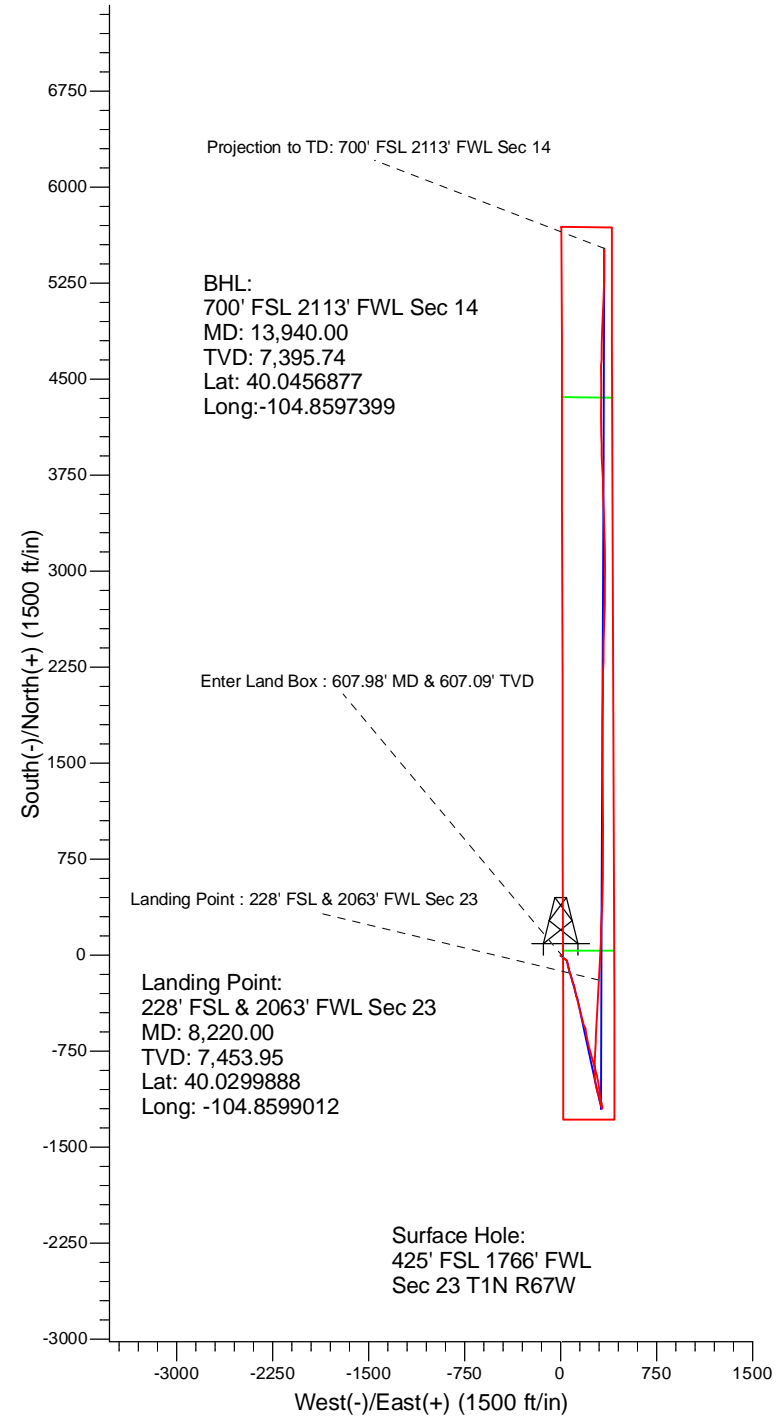
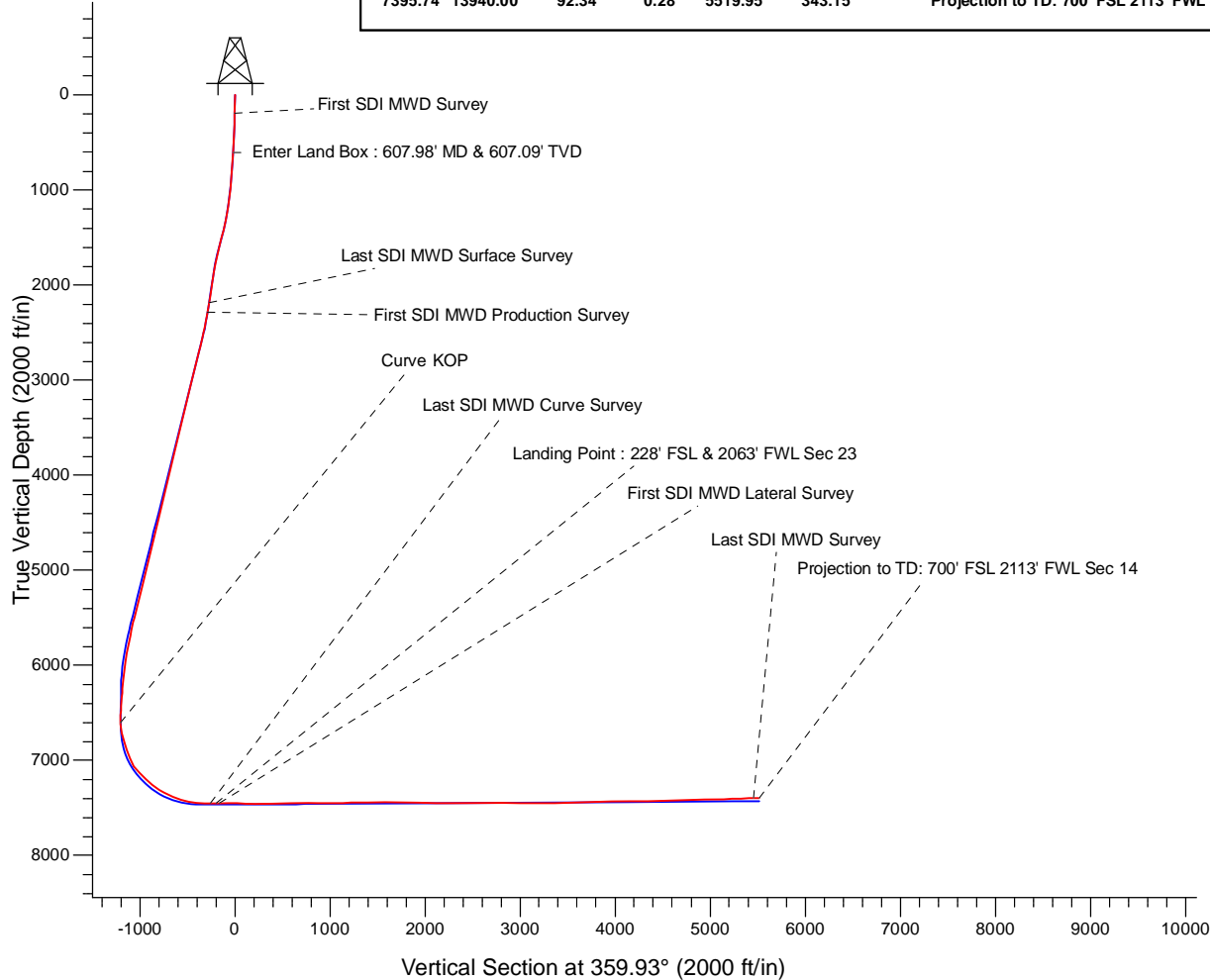
PROJECT DETAILS: US Rockies Wattenberg Planning UTM83

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
190.00	190.00	0.44	164.49	-0.70	0.20	First SDI MWD Survey
607.09	607.98	6.10	132.18	-15.13	18.42	Enter Land Box : 607.98' MD & 607.09' TVD
2182.83	2210.00	9.27	165.94	-269.62	111.50	Last SDI MWD Surface Survey
2287.43	2316.00	9.37	165.63	-286.26	115.71	First SDI MWD Production Survey
6602.19	6740.00	1.28	322.79	-1201.86	325.95	Curve KOP
7454.25	8159.00	89.83	2.79	-257.63	294.98	Last SDI MWD Curve Survey
7453.95	8220.00	90.73	3.02	-196.71	298.07	Landing Point : 228' FSL & 2063' FWL Sec 23
7453.40	8253.00	91.21	3.14	-163.76	299.84	First SDI MWD Lateral Survey
7398.23	13879.00	92.34	0.28	5459.00	342.85	Last SDI MWD Survey
7395.74	13940.00	92.34	0.28	5519.95	343.15	Projection to TD: 700' FSL 2113' FWL Sec 14





US ROCKIES REGION PLANNING

US Rockies Wattenberg Planning UTM83

Jaguar 14-23HZ Pad 1N-67W-23

Jaguar 3N-14HZ

OH

Design: OH

Standard Survey Report

22 December, 2016



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Jaguar 3N-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4993' & KB 17' @ 5010.00ft
Site:	Jaguar 14-23HZ Pad 1N-67W-23	MD Reference:	GL 4993' & KB 17' @ 5010.00ft
Well:	Jaguar 3N-14HZ	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		Jaguar 14-23HZ Pad 1N-67W-23			
Site Position:		Northing:	14,537,925.88 usft	Latitude:	40.0306530
From:	Lat/Long	Easting:	1,679,335.86 usft	Longitude:	-104.8609660
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.09 °

Well	Jaguar 3N-14HZ, 425' FSL 1766' FWL Sec 23 T1N R67W					
Well Position	+N/-S	0.00 ft	Northing:	14,537,880.72 usft	Latitude:	40.0305290
	+E/-W	0.00 ft	Easting:	1,679,335.93 usft	Longitude:	-104.8609660
Position Uncertainty		3.28 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,993.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/5/2015	8.33	66.59	52,490
	BGGM2016	11/2/2016	8.47	66.60	52,251
	User Defined	11/22/2016	8.20	66.39	52,385
	User Defined	12/16/2016	8.18	66.38	52,397

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	359.93

Survey Program	Date	12/22/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
190.00	2,273.00	Survey #3 - Surface (OH)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	
2,316.00	13,940.00	Survey #4 - 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 (°/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
190.00	0.44	164.49	190.00	-0.70	0.20	-0.70	0.23	0.23	0.00
First SDI MWD Survey									
220.00	0.47	120.68	220.00	-0.88	0.33	-0.88	1.14	0.10	-146.03
313.00	1.52	128.93	312.98	-1.85	1.62	-1.85	1.14	1.13	8.87
405.00	3.17	124.20	404.90	-4.04	4.67	-4.05	1.80	1.79	-5.14

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Jaguar 3N-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4993' & KB 17' @ 5010.00ft
Site:	Jaguar 14-23HZ Pad 1N-67W-23	MD Reference:	GL 4993' & KB 17' @ 5010.00ft
Well:	Jaguar 3N-14HZ	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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
498.00	5.22	127.86	497.65	-8.09	10.14	-8.10	2.22	2.20	3.94
591.00	6.00	132.00	590.20	-13.93	17.09	-13.96	0.94	0.84	4.45
607.98	6.10	132.18	607.09	-15.13	18.42	-15.16	0.57	0.56	1.03
Enter Land Box : 607.98' MD & 607.09' TVD									
683.00	6.52	132.89	681.65	-20.71	24.49	-20.74	0.57	0.57	0.95
776.00	7.44	132.27	773.96	-28.35	32.82	-28.39	0.99	0.99	-0.67
868.00	7.43	133.98	865.19	-36.49	41.50	-36.54	0.24	-0.01	1.86
961.00	6.87	141.53	957.47	-45.02	49.29	-45.08	1.17	-0.60	8.12
1,053.00	6.10	166.10	1,048.90	-54.07	53.89	-54.14	3.10	-0.84	26.71
1,146.00	7.47	174.86	1,141.25	-64.89	55.62	-64.96	1.84	1.47	9.42
1,240.00	10.79	170.82	1,234.04	-79.67	57.57	-79.74	3.60	3.53	-4.30
1,334.00	12.08	166.22	1,326.18	-97.91	61.32	-97.98	1.68	1.37	-4.89
1,428.00	13.82	160.01	1,417.79	-118.01	67.50	-118.10	2.37	1.85	-6.61
1,522.00	15.25	160.89	1,508.78	-140.25	75.39	-140.34	1.54	1.52	0.94
1,616.00	14.85	165.19	1,599.55	-163.57	82.51	-163.68	1.26	-0.43	4.57
1,710.00	14.11	165.42	1,690.57	-186.31	88.48	-186.42	0.79	-0.79	0.24
1,805.00	11.43	164.54	1,783.21	-206.59	93.90	-206.71	2.83	-2.82	-0.93
1,899.00	10.17	163.52	1,875.54	-223.53	98.74	-223.65	1.36	-1.34	-1.09
1,993.00	8.98	163.53	1,968.23	-238.52	103.17	-238.65	1.27	-1.27	0.01
2,087.00	7.97	165.26	2,061.20	-251.86	106.91	-251.99	1.11	-1.07	1.84
2,181.00	8.88	165.59	2,154.19	-265.19	110.37	-265.32	0.97	0.97	0.35
2,210.00	9.27	165.94	2,182.83	-269.62	111.50	-269.76	1.36	1.34	1.21
Last SDI MWD Surface Survey									
2,316.00	9.37	165.63	2,287.43	-286.26	115.71	-286.40	0.11	0.09	-0.29
First SDI MWD Production Survey									
2,409.00	10.80	171.29	2,378.99	-302.21	118.91	-302.36	1.87	1.54	6.09
2,503.00	14.05	166.12	2,470.78	-322.00	122.98	-322.15	3.65	3.46	-5.50
2,597.00	13.59	166.36	2,562.06	-343.81	128.33	-343.96	0.49	-0.49	0.26
2,691.00	14.28	165.59	2,653.29	-365.77	133.82	-365.93	0.76	0.73	-0.82
2,785.00	12.50	162.95	2,744.73	-386.73	139.68	-386.90	2.00	-1.89	-2.81
2,878.00	14.69	166.86	2,835.12	-407.83	145.32	-408.01	2.55	2.35	4.20
2,972.00	15.42	165.19	2,925.90	-431.52	151.22	-431.71	0.90	0.78	-1.78
3,066.00	14.42	166.72	3,016.73	-455.00	157.10	-455.19	1.14	-1.06	1.63
3,160.00	15.02	162.24	3,107.64	-477.99	163.51	-478.19	1.37	0.64	-4.77
3,254.00	14.65	164.66	3,198.51	-501.05	170.37	-501.26	0.77	-0.39	2.57
3,348.00	13.51	165.10	3,289.69	-523.13	176.34	-523.34	1.22	-1.21	0.47
3,442.00	13.15	162.17	3,381.15	-543.92	182.43	-544.14	0.81	-0.38	-3.12
3,536.00	13.61	160.83	3,472.60	-564.54	189.34	-564.77	0.59	0.49	-1.43
3,630.00	14.80	167.24	3,563.73	-586.70	195.62	-586.94	2.10	1.27	6.82
3,724.00	12.94	168.89	3,654.99	-608.74	200.30	-608.98	2.02	-1.98	1.76
3,818.00	13.88	170.17	3,746.42	-630.18	204.26	-630.43	1.05	1.00	1.36
3,912.00	15.33	172.49	3,837.39	-653.61	207.81	-653.86	1.66	1.54	2.47
4,007.00	13.27	169.97	3,929.44	-676.80	211.35	-677.05	2.26	-2.17	-2.65
4,101.00	13.35	161.66	4,020.92	-697.72	216.64	-697.99	2.04	0.09	-8.84

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Jaguar 3N-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4993' & KB 17' @ 5010.00ft
Site:	Jaguar 14-23HZ Pad 1N-67W-23	MD Reference:	GL 4993' & KB 17' @ 5010.00ft
Well:	Jaguar 3N-14HZ	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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,195.00	14.05	165.86	4,112.25	-719.09	222.84	-719.36	1.29	0.74	4.47	
4,288.00	13.91	166.98	4,202.49	-740.93	228.12	-741.20	0.33	-0.15	1.20	
4,383.00	14.69	166.01	4,294.55	-763.74	233.60	-764.03	0.86	0.82	-1.02	
4,476.00	14.01	165.18	4,384.65	-786.07	239.33	-786.36	0.76	-0.73	-0.89	
4,570.00	12.98	162.70	4,476.05	-807.15	245.38	-807.44	1.26	-1.10	-2.64	
4,664.00	14.86	161.85	4,567.29	-828.68	252.28	-828.99	2.01	2.00	-0.90	
4,758.00	12.91	159.94	4,658.54	-850.00	259.64	-850.32	2.13	-2.07	-2.03	
4,852.00	13.75	161.91	4,750.00	-870.48	266.71	-870.81	1.02	0.89	2.10	
4,946.00	14.92	166.80	4,841.08	-892.88	272.94	-893.22	1.79	1.24	5.20	
5,040.00	14.85	168.58	4,931.93	-916.47	278.09	-916.81	0.49	-0.07	1.89	
5,160.00	14.34	167.62	5,048.05	-946.06	284.32	-946.41	0.47	-0.43	-0.80	
5,254.00	13.20	166.56	5,139.35	-967.87	289.31	-968.22	1.24	-1.21	-1.13	
5,346.00	13.98	170.37	5,228.77	-989.04	293.61	-989.40	1.29	0.85	4.14	
5,440.00	13.58	170.57	5,320.07	-1,011.13	297.32	-1,011.49	0.43	-0.43	0.21	
5,534.00	14.84	175.27	5,411.19	-1,034.01	300.12	-1,034.38	1.82	1.34	5.00	
5,628.00	14.37	174.81	5,502.16	-1,057.62	302.17	-1,057.99	0.51	-0.50	-0.49	
5,722.00	12.45	175.88	5,593.59	-1,079.35	303.95	-1,079.72	2.06	-2.04	1.14	
5,816.00	10.70	172.03	5,685.68	-1,098.10	305.89	-1,098.47	2.03	-1.86	-4.10	
5,910.00	11.16	166.71	5,777.97	-1,115.60	309.19	-1,115.97	1.18	0.49	-5.66	
6,004.00	10.53	165.16	5,870.29	-1,132.75	313.48	-1,133.13	0.74	-0.67	-1.65	
6,098.00	8.62	168.78	5,962.98	-1,147.97	317.05	-1,148.35	2.13	-2.03	3.85	
6,192.00	7.00	166.50	6,056.11	-1,160.45	319.76	-1,160.84	1.75	-1.72	-2.43	
6,286.00	5.67	165.45	6,149.53	-1,170.51	322.26	-1,170.90	1.42	-1.41	-1.12	
6,381.00	5.92	174.65	6,244.05	-1,179.93	323.90	-1,180.33	1.01	0.26	9.68	
6,475.00	4.73	169.76	6,337.64	-1,188.57	325.04	-1,188.97	1.35	-1.27	-5.20	
6,569.00	4.19	173.37	6,431.35	-1,195.80	326.12	-1,196.19	0.65	-0.57	3.84	
6,663.00	2.24	180.79	6,525.20	-1,201.05	326.50	-1,201.44	2.12	-2.07	7.89	
6,740.00	1.28	322.79	6,602.19	-1,201.86	325.95	-1,202.26	4.35	-1.24	184.42	
Curve KOP										
6,757.00	1.98	331.64	6,619.18	-1,201.45	325.70	-1,201.85	4.35	4.10	52.06	
6,851.00	15.29	341.59	6,711.91	-1,188.20	320.99	-1,188.60	14.20	14.16	10.59	
6,945.00	16.01	346.81	6,802.43	-1,163.82	314.12	-1,164.21	1.68	0.77	5.55	
7,039.00	18.47	349.29	6,892.20	-1,136.57	308.39	-1,136.94	2.73	2.62	2.64	
7,133.00	23.66	342.26	6,979.90	-1,103.94	299.87	-1,104.31	6.13	5.52	-7.48	
7,226.00	35.61	342.17	7,060.59	-1,060.24	285.84	-1,060.59	12.85	12.85	-0.10	
7,319.00	41.29	350.88	7,133.44	-1,004.08	272.67	-1,004.41	8.43	6.11	9.37	
7,412.00	47.64	359.07	7,199.84	-939.31	267.24	-939.63	9.19	6.83	8.81	
7,504.00	52.79	2.08	7,258.70	-868.65	268.02	-868.98	6.14	5.60	3.27	
7,597.00	58.34	2.87	7,311.27	-792.05	271.35	-792.38	6.01	5.97	0.85	
7,689.00	63.72	1.46	7,355.81	-711.65	274.36	-711.99	6.00	5.85	-1.53	
7,783.00	68.39	2.48	7,393.95	-625.82	277.33	-626.16	5.07	4.97	1.09	
7,877.00	75.29	3.20	7,423.23	-536.67	281.76	-537.01	7.38	7.34	0.77	
7,971.00	80.75	2.08	7,442.74	-444.85	285.98	-445.20	5.92	5.81	-1.19	
8,065.00	87.68	3.06	7,452.21	-351.48	290.18	-351.83	7.44	7.37	1.04	

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8,159.00	89.83	2.79	7,454.25	-257.63	294.98	-257.99	2.31	2.29	-0.29
Last SDI MWD Curve Survey									
8,220.00	90.73	3.02	7,453.95	-196.71	298.07	-197.07	1.51	1.47	0.37
Landing Point : 228' FSL & 2063' FWL Sec 23									
8,253.00	91.21	3.14	7,453.40	-163.76	299.84	-164.13	1.51	1.47	0.37
First SDI MWD Lateral Survey									
8,347.00	90.54	3.00	7,451.96	-69.91	304.87	-70.28	0.73	-0.71	-0.15
8,442.00	88.79	3.39	7,452.52	24.94	310.17	24.56	1.89	-1.84	0.41
8,536.00	88.42	1.95	7,454.80	118.81	314.54	118.42	1.58	-0.39	-1.53
8,630.00	89.73	1.58	7,456.32	212.75	317.44	212.36	1.45	1.39	-0.39
8,724.00	90.54	1.81	7,456.10	306.71	320.22	306.32	0.90	0.86	0.24
8,818.00	91.48	1.24	7,454.44	400.66	322.72	400.26	1.17	1.00	-0.61
8,912.00	91.78	1.17	7,451.77	494.60	324.70	494.20	0.33	0.32	-0.07
9,006.00	91.04	1.05	7,449.46	588.55	326.52	588.15	0.80	-0.79	-0.13
9,101.00	91.11	1.39	7,447.67	683.51	328.54	683.11	0.37	0.07	0.36
9,195.00	89.09	2.20	7,447.51	777.46	331.48	777.06	2.32	-2.15	0.86
9,289.00	88.09	359.41	7,449.82	871.41	332.80	871.01	3.15	-1.06	-2.97
9,378.00	88.32	358.69	7,452.61	960.36	331.33	959.95	0.85	0.26	-0.81
9,467.00	91.54	359.05	7,452.72	1,049.33	329.57	1,048.92	3.64	3.62	0.40
9,556.00	91.65	359.32	7,450.24	1,138.28	328.31	1,137.88	0.33	0.12	0.30
9,645.00	91.11	0.41	7,448.10	1,227.26	328.10	1,226.85	1.37	-0.61	1.22
9,734.00	90.91	0.25	7,446.53	1,316.24	328.61	1,315.84	0.29	-0.22	-0.18
9,823.00	91.01	359.61	7,445.04	1,405.23	328.50	1,404.83	0.73	0.11	-0.72
9,912.00	91.34	0.09	7,443.21	1,494.21	328.27	1,493.81	0.65	0.37	0.54
10,001.00	89.90	359.70	7,442.25	1,583.20	328.11	1,582.80	1.68	-1.62	-0.44
10,090.00	89.60	0.20	7,442.64	1,672.20	328.03	1,671.80	0.66	-0.34	0.56
10,179.00	89.36	0.27	7,443.45	1,761.19	328.39	1,760.79	0.28	-0.27	0.08
10,268.00	88.93	0.69	7,444.78	1,850.18	329.14	1,849.78	0.68	-0.48	0.47
10,357.00	88.59	359.36	7,446.70	1,939.16	329.18	1,938.75	1.54	-0.38	-1.49
10,446.00	89.40	0.52	7,448.26	2,028.14	329.08	2,027.74	1.59	0.91	1.30
10,535.00	89.19	0.88	7,449.36	2,117.13	330.17	2,116.72	0.47	-0.24	0.40
10,624.00	88.86	1.90	7,450.87	2,206.09	332.33	2,205.68	1.20	-0.37	1.15
10,713.00	90.17	1.57	7,451.63	2,295.04	335.02	2,294.63	1.52	1.47	-0.37
10,802.00	90.23	359.89	7,451.32	2,384.03	336.16	2,383.62	1.89	0.07	-1.89
10,891.00	90.44	1.65	7,450.79	2,473.02	337.35	2,472.60	1.99	0.24	1.98
10,980.00	90.60	1.21	7,449.99	2,561.99	339.58	2,561.57	0.53	0.18	-0.49
11,069.00	90.97	2.04	7,448.77	2,650.94	342.10	2,650.52	1.02	0.42	0.93
11,158.00	89.50	0.91	7,448.40	2,739.91	344.39	2,739.48	2.08	-1.65	-1.27
11,247.00	89.30	0.28	7,449.33	2,828.90	345.31	2,828.47	0.74	-0.22	-0.71
11,335.00	89.13	0.67	7,450.54	2,916.89	346.04	2,916.46	0.48	-0.19	0.44
11,424.00	89.19	359.49	7,451.85	3,005.87	346.17	3,005.45	1.33	0.07	-1.33
11,513.00	89.13	359.48	7,453.15	3,094.86	345.37	3,094.44	0.07	-0.07	-0.01
11,602.00	90.44	0.09	7,453.48	3,183.86	345.03	3,183.43	1.62	1.47	0.69
11,691.00	91.04	358.48	7,452.33	3,272.84	343.92	3,272.42	1.93	0.67	-1.81

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Jaguar 3N-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4993' & KB 17' @ 5010.00ft
Site:	Jaguar 14-23HZ Pad 1N-67W-23	MD Reference:	GL 4993' & KB 17' @ 5010.00ft
Well:	Jaguar 3N-14HZ	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 (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,780.00	91.64	357.94	7,450.25	3,361.77	341.14	3,361.35	0.91	0.67	-0.61
11,870.00	91.74	357.62	7,447.60	3,451.66	337.66	3,451.25	0.37	0.11	-0.36
11,959.00	92.15	358.65	7,444.58	3,540.56	334.76	3,540.15	1.25	0.46	1.16
12,048.00	91.81	357.62	7,441.50	3,629.46	331.87	3,629.06	1.22	-0.38	-1.16
12,137.00	91.64	357.90	7,438.82	3,718.35	328.39	3,717.95	0.37	-0.19	0.31
12,225.00	91.82	358.29	7,436.17	3,806.27	325.47	3,805.87	0.49	0.20	0.44
12,314.00	92.62	357.57	7,432.72	3,895.14	322.26	3,894.74	1.21	0.90	-0.81
12,404.00	89.56	357.74	7,431.01	3,985.04	318.58	3,984.65	3.41	-3.40	0.19
12,493.00	89.90	359.77	7,431.43	4,074.01	316.64	4,073.62	2.31	0.38	2.28
12,582.00	90.64	359.68	7,431.01	4,163.01	316.21	4,162.62	0.84	0.83	-0.10
12,671.00	90.77	0.52	7,429.91	4,252.00	316.37	4,251.61	0.95	0.15	0.94
12,760.00	90.17	0.65	7,429.18	4,340.99	317.28	4,340.60	0.69	-0.67	0.15
12,849.00	91.78	0.43	7,427.67	4,429.97	318.12	4,429.58	1.83	1.81	-0.25
12,937.00	91.98	359.20	7,424.78	4,517.92	317.83	4,517.53	1.42	0.23	-1.40
13,026.00	92.45	0.57	7,421.34	4,606.85	317.65	4,606.46	1.63	0.53	1.54
13,115.00	92.08	2.36	7,417.82	4,695.75	319.93	4,695.36	2.05	-0.42	2.01
13,204.00	91.21	1.10	7,415.27	4,784.67	322.61	4,784.27	1.72	-0.98	-1.42
13,293.00	90.44	1.82	7,413.99	4,873.63	324.88	4,873.23	1.18	-0.87	0.81
13,383.00	90.13	2.04	7,413.54	4,963.58	327.91	4,963.18	0.42	-0.34	0.24
13,473.00	91.11	3.01	7,412.57	5,053.49	331.88	5,053.08	1.53	1.09	1.08
13,562.00	91.34	2.65	7,410.66	5,142.36	336.27	5,141.94	0.48	0.26	-0.40
13,651.00	91.85	1.96	7,408.19	5,231.25	339.85	5,230.83	0.96	0.57	-0.78
13,741.00	92.73	0.49	7,404.59	5,321.15	341.77	5,320.73	1.90	0.98	-1.63
13,830.00	92.69	0.48	7,400.38	5,410.05	342.52	5,409.63	0.05	-0.04	-0.01
13,879.00	92.34	0.28	7,398.23	5,459.00	342.85	5,458.58	0.82	-0.71	-0.41
Last SDI MWD Survey									
13,940.00	92.34	0.28	7,395.74	5,519.95	343.15	5,519.53	0.00	0.00	0.00
Projection to TD: 700' FSL 2113' FWL Sec 14									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,822.13	1,800.00	9 5/8"	9.625	13.500	
7,920.02	7,433.25	Top of Production	5.500	7.875	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well Jaguar 3N-14HZ
Project:	US Rockies Wattenberg Planning UTM83	TVD Reference:	GL 4993' & KB 17' @ 5010.00ft
Site:	Jaguar 14-23HZ Pad 1N-67W-23	MD Reference:	GL 4993' & KB 17' @ 5010.00ft
Well:	Jaguar 3N-14HZ	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Denver Sales Office

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
190.00	190.00	-0.70	0.20	First SDI MWD Survey
607.98	607.09	-15.13	18.42	Enter Land Box : 607.98' MD & 607.09' TVD
2,210.00	2,182.83	-269.62	111.50	Last SDI MWD Surface Survey
2,316.00	2,287.43	-286.26	115.71	First SDI MWD Production Survey
6,740.00	6,602.19	-1,201.86	325.95	Curve KOP
8,159.00	7,454.25	-257.63	294.98	Last SDI MWD Curve Survey
8,220.00	7,453.95	-196.71	298.07	Landing Point : 228' FSL & 2063' FWL Sec 23
8,253.00	7,453.40	-163.76	299.84	First SDI MWD Lateral Survey
13,879.00	7,398.23	5,459.00	342.85	Last SDI MWD Survey
13,940.00	7,395.74	5,519.95	343.15	Projection to TD: 700' FSL 2113' FWL Sec 14

Checked By: _____	Approved By: _____	Date: _____
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