



Ursa Operating Company, LLC

Rockies Region

Monument Ridge B

Monument Ridge B 31A-17-07-95

Wellbore #1

Design: Actual

End Of Well Report

12 October, 2016



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Monument Ridge B 31A-17-07-95
Project:	Rockies Region	TVD Reference:	Monument Ridge B 31A-17-07-95 @ 5718.8usft (PLAN
Site:	Monument Ridge B	MD Reference:	Monument Ridge B 31A-17-07-95 @ 5718.8usft (PLAN
Well:	Monument Ridge B 31A-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Project		Rockies Region	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	Monument Ridge B					
Site Position:			Northing:	1,596,716.56 usft	Latitude:	39.4445837
From:	Lat/Long		Easting:	2,287,433.43 usft	Longitude:	-108.0235181
Position Uncertainty:	0.0 usft		Slot Radius:	13-3/16 "	Grid Convergence:	-1.59 °

Well		Monument Ridge B 31A-17-07-95, SHL: 39.447530940 -108.012276367				
Well Position	+N/-S	0.0 usft	Northing:	1,597,701.64 usft	Latitude:	39.4475309
	+E/-W	0.0 usft	Easting:	2,290,636.64 usft	Longitude:	-108.0122764
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,718.8 usft	Ground Level:	5,701.8 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/1/2016	9.79	65.56	51,600

Design		Actual			
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)		+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0		0.0	0.0	237.92

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Survey Program		Date 10/12/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
111.0	1,810.0	Surface (Wellbore #1)	MWD	MWD - Standard
1,913.0	7,518.0	Production (Wellbore #1)	MWD	MWD - Standard

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
111.0	1.93	315.78	111.0	0.4	1.3	-1.3	1.74	1.74	0.00	
142.0	1.70	322.17	142.0	0.5	2.1	-1.9	0.99	-0.74	20.61	
172.0	0.72	333.40	172.0	0.6	2.6	-2.3	3.35	-3.27	37.43	
202.0	0.47	325.06	202.0	0.6	2.9	-2.5	0.88	-0.83	-27.80	
231.0	0.62	319.34	231.0	0.6	3.1	-2.6	0.55	0.52	-19.72	
261.0	0.83	302.16	261.0	0.7	3.3	-2.9	1.00	0.70	-57.27	
292.0	0.92	290.29	291.9	1.0	3.5	-3.3	0.65	0.29	-38.29	
322.0	0.70	279.48	321.9	1.2	3.6	-3.8	0.89	-0.73	-36.03	
353.0	0.56	265.75	352.9	1.5	3.7	-4.1	0.66	-0.45	-44.29	
383.0	0.66	250.21	382.9	1.8	3.6	-4.4	0.64	0.33	-51.80	
414.0	0.88	225.78	413.9	2.2	3.4	-4.7	1.26	0.71	-78.81	
445.0	1.54	215.59	444.9	2.8	2.9	-5.2	2.23	2.13	-32.87	
475.0	1.98	222.97	474.9	3.7	2.2	-5.7	1.65	1.47	24.60	
506.0	2.88	223.21	505.9	5.0	1.2	-6.6	2.90	2.90	0.77	
536.0	3.70	228.81	535.8	6.7	0.0	-7.9	2.93	2.73	18.67	
567.0	4.35	236.28	566.8	8.8	-1.3	-9.6	2.69	2.10	24.10	
598.0	5.01	235.89	597.7	11.4	-2.7	-11.7	2.13	2.13	-1.26	
628.0	5.84	240.90	627.5	14.2	-4.2	-14.1	3.18	2.77	16.70	
659.0	6.87	242.17	658.3	17.6	-5.8	-17.1	3.35	3.32	4.10	
689.0	7.87	237.73	688.1	21.5	-7.8	-20.5	3.83	3.33	-14.80	

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Design:	Actual	Database:	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
719.0	9.05	239.71	717.8	25.9	-10.0	-24.2	4.05	3.93	6.60	
749.0	10.41	238.25	747.3	30.9	-12.7	-28.6	4.61	4.53	-4.87	
780.0	11.65	236.28	777.8	36.9	-15.9	-33.6	4.18	4.00	-6.35	
842.0	14.68	235.19	838.1	51.0	-23.8	-45.2	4.90	4.89	-1.76	
884.0	16.57	234.79	878.6	62.3	-30.3	-54.5	4.51	4.50	-0.95	
926.0	18.11	235.05	918.7	74.8	-37.5	-64.7	3.67	3.67	0.62	
969.0	19.34	235.84	959.4	88.6	-45.3	-76.1	2.92	2.86	1.84	
1,012.0	20.45	234.84	999.8	103.2	-53.7	-88.1	2.70	2.58	-2.33	
1,054.0	21.31	236.02	1,039.1	118.1	-62.2	-100.5	2.28	2.05	2.81	
1,097.0	23.07	237.91	1,078.9	134.4	-71.0	-114.1	4.42	4.09	4.40	
1,140.0	24.74	238.13	1,118.2	151.8	-80.2	-128.9	3.89	3.88	0.51	
1,183.0	26.28	236.81	1,157.0	170.3	-90.2	-144.5	3.82	3.58	-3.07	
1,225.0	27.64	238.83	1,194.4	189.4	-100.3	-160.6	3.90	3.24	4.81	
1,268.0	28.86	238.73	1,232.3	209.7	-110.9	-178.0	2.84	2.84	-0.23	
1,311.0	30.67	240.15	1,269.6	231.0	-121.7	-196.4	4.52	4.21	3.30	
1,354.0	32.04	238.66	1,306.3	253.4	-133.1	-215.6	3.66	3.19	-3.47	
1,396.0	33.13	239.40	1,341.7	276.0	-144.8	-235.0	2.76	2.60	1.76	
1,439.0	32.74	237.73	1,377.8	299.4	-156.9	-255.0	2.30	-0.91	-3.88	
1,482.0	33.16	237.59	1,413.9	322.8	-169.5	-274.7	0.99	0.98	-0.33	
1,524.0	34.54	238.53	1,448.8	346.2	-181.8	-294.6	3.51	3.29	2.24	
1,567.0	34.45	237.21	1,484.2	370.5	-194.8	-315.2	1.75	-0.21	-3.07	
1,609.0	34.67	236.55	1,518.8	394.4	-207.8	-335.2	1.03	0.52	-1.57	
1,652.0	34.89	237.60	1,554.1	418.9	-221.1	-355.8	1.48	0.51	2.44	
1,695.0	35.13	236.84	1,589.3	443.5	-234.5	-376.5	1.16	0.56	-1.77	
1,738.0	35.07	236.86	1,624.5	468.3	-248.0	-397.2	0.14	-0.14	0.05	
1,780.0	35.16	237.08	1,658.9	492.4	-261.2	-417.5	0.37	0.21	0.52	

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1,810.0	35.07	237.51	1,683.4	509.7	-270.5	-432.0	0.88	-0.30	1.43	
Last PZD Surface Survey										
1,913.0	34.28	237.43	1,768.1	568.3	-302.0	-481.4	0.77	-0.77	-0.08	
1,998.0	34.58	236.37	1,838.2	616.3	-328.3	-521.6	0.79	0.35	-1.25	
2,084.0	34.69	236.06	1,909.0	665.2	-355.4	-562.3	0.24	0.13	-0.36	
2,169.0	35.20	236.11	1,978.7	713.8	-382.6	-602.7	0.60	0.60	0.06	
2,255.0	35.90	237.82	2,048.6	763.8	-409.8	-644.6	1.41	0.81	1.99	
2,340.0	35.51	236.15	2,117.7	813.4	-436.9	-686.2	1.23	-0.46	-1.96	
2,426.0	35.28	237.43	2,187.8	863.2	-464.2	-727.9	0.90	-0.27	1.49	
2,511.0	34.63	236.90	2,257.4	911.9	-490.6	-768.8	0.84	-0.76	-0.62	
2,596.0	34.37	237.43	2,327.5	960.1	-516.7	-809.2	0.47	-0.31	0.62	
2,767.0	33.22	237.43	2,469.6	1,055.2	-567.9	-889.4	0.67	-0.67	0.00	
2,853.0	32.70	236.90	2,541.8	1,102.0	-593.2	-928.7	0.69	-0.60	-0.62	
2,938.0	33.09	239.10	2,613.1	1,148.1	-617.7	-967.8	1.48	0.46	2.59	
3,023.0	33.66	239.76	2,684.1	1,194.9	-641.5	-1,008.1	0.80	0.67	0.78	
3,109.0	34.23	238.83	2,755.5	1,242.9	-666.0	-1,049.4	0.90	0.66	-1.08	
3,194.0	33.93	237.82	2,825.9	1,290.5	-691.0	-1,089.9	0.75	-0.35	-1.19	
3,279.0	33.09	237.87	2,896.7	1,337.4	-716.0	-1,129.6	0.99	-0.99	0.06	
3,365.0	32.30	238.31	2,969.1	1,383.9	-740.5	-1,169.1	0.96	-0.92	0.51	
3,450.0	32.56	235.58	3,040.9	1,429.4	-765.4	-1,207.3	1.75	0.31	-3.21	
3,536.0	33.14	236.83	3,113.1	1,476.1	-791.3	-1,246.0	1.04	0.67	1.45	
3,621.0	33.76	237.99	3,184.0	1,522.9	-816.6	-1,285.5	1.05	0.73	1.36	
3,706.0	34.32	238.22	3,254.5	1,570.5	-841.7	-1,325.9	0.68	0.66	0.27	
3,792.0	35.02	239.15	3,325.2	1,619.4	-867.1	-1,367.7	1.02	0.81	1.08	
3,877.0	33.97	238.00	3,395.2	1,667.5	-892.2	-1,408.8	1.45	-1.24	-1.35	
3,962.0	34.28	239.18	3,465.6	1,715.2	-917.1	-1,449.5	0.86	0.36	1.39	
4,047.0	33.66	238.70	3,536.1	1,762.7	-941.6	-1,490.2	0.79	-0.73	-0.56	

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4,133.0	32.42	238.34	3,608.2	1,809.6	-966.1	-1,530.2	1.46	-1.44	-0.42	
4,218.0	31.11	238.66	3,680.5	1,854.3	-989.4	-1,568.3	1.55	-1.54	0.38	
4,304.0	28.78	239.58	3,755.0	1,897.2	-1,011.5	-1,605.1	2.76	-2.71	1.07	
4,389.0	26.15	238.00	3,830.4	1,936.4	-1,031.8	-1,638.7	3.21	-3.09	-1.86	
4,474.0	24.74	238.22	3,907.1	1,973.0	-1,051.1	-1,669.7	1.66	-1.66	0.26	
4,560.0	22.50	234.83	3,985.9	2,007.4	-1,070.0	-1,698.4	3.05	-2.60	-3.94	
4,645.0	20.13	234.44	4,065.1	2,038.2	-1,087.9	-1,723.6	2.79	-2.79	-0.46	
4,730.0	17.84	236.77	4,145.5	2,065.9	-1,103.5	-1,746.4	2.84	-2.69	2.74	
4,816.0	15.51	235.49	4,227.9	2,090.5	-1,117.3	-1,766.9	2.74	-2.71	-1.49	
4,901.0	13.18	234.35	4,310.2	2,111.5	-1,129.4	-1,784.2	2.76	-2.74	-1.34	
4,987.0	10.94	237.60	4,394.3	2,129.5	-1,139.5	-1,799.0	2.72	-2.60	3.78	
5,072.0	8.17	235.19	4,478.1	2,143.6	-1,147.2	-1,810.8	3.29	-3.26	-2.84	
5,157.0	6.11	243.27	4,562.5	2,154.1	-1,152.7	-1,819.8	2.69	-2.42	9.51	
5,243.0	3.65	254.74	4,648.1	2,161.3	-1,155.5	-1,826.5	3.06	-2.86	13.34	
5,308.7	1.65	230.89	4,713.8	2,164.3	-1,156.6	-1,829.3	3.41	-3.05	-36.28	
Monument Ridge B-31A-17-07-95 TGT										
5,328.0	1.23	210.31	4,733.1	2,164.7	-1,157.0	-1,829.6	3.41	-2.17	-106.83	
5,413.0	1.42	174.90	4,818.0	2,166.0	-1,158.8	-1,830.0	0.97	0.22	-41.66	
5,499.0	0.31	81.03	4,904.0	2,166.3	-1,159.8	-1,829.6	1.71	-1.29	-109.15	
5,584.0	0.44	99.26	4,989.0	2,165.8	-1,159.9	-1,829.1	0.21	0.15	21.45	
5,668.0	0.75	122.25	5,073.0	2,165.3	-1,160.2	-1,828.3	0.46	0.37	27.37	
5,754.0	0.88	150.11	5,159.0	2,165.1	-1,161.1	-1,827.5	0.48	0.15	32.40	
5,840.0	0.88	140.13	5,245.0	2,165.0	-1,162.2	-1,826.8	0.18	0.00	-11.60	
5,925.0	1.01	163.07	5,330.0	2,165.2	-1,163.4	-1,826.1	0.47	0.15	26.99	
6,010.0	1.05	167.16	5,415.0	2,165.6	-1,164.9	-1,825.7	0.10	0.05	4.81	
6,096.0	1.35	175.27	5,501.0	2,166.3	-1,166.6	-1,825.5	0.40	0.35	9.43	
6,181.0	1.54	188.43	5,585.9	2,167.5	-1,168.8	-1,825.6	0.45	0.22	15.48	

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6,266.0	1.36	302.38	5,670.9	2,168.7	-1,169.4	-1,826.6	2.86	-0.21	134.06	
6,352.0	1.68	299.07	5,756.9	2,169.8	-1,168.2	-1,828.5	0.39	0.37	-3.85	
6,437.0	1.67	299.04	5,841.9	2,171.0	-1,167.0	-1,830.7	0.01	-0.01	-0.04	
6,523.0	1.63	261.68	5,927.8	2,172.7	-1,166.6	-1,833.0	1.23	-0.05	-43.44	
6,608.0	1.01	295.74	6,012.8	2,174.2	-1,166.4	-1,834.9	1.15	-0.73	40.07	
6,693.0	0.53	341.88	6,097.8	2,174.5	-1,165.7	-1,835.7	0.88	-0.56	54.28	
6,779.0	0.88	0.39	6,183.8	2,174.0	-1,164.7	-1,835.8	0.48	0.41	21.52	
6,864.0	0.66	353.05	6,268.8	2,173.5	-1,163.5	-1,835.9	0.28	-0.26	-8.64	
6,950.0	0.66	355.77	6,354.8	2,173.0	-1,162.5	-1,836.0	0.04	0.00	3.16	
7,035.0	0.31	17.30	6,439.8	2,172.6	-1,161.8	-1,835.9	0.46	-0.41	25.33	
7,121.0	0.13	60.68	6,525.8	2,172.4	-1,161.6	-1,835.8	0.27	-0.21	50.44	
7,206.0	0.48	165.31	6,610.8	2,172.4	-1,161.9	-1,835.6	0.62	0.41	123.09	
7,291.0	1.13	203.15	6,695.8	2,173.2	-1,163.0	-1,835.8	0.95	0.76	44.52	
7,377.0	1.54	202.40	6,781.7	2,174.8	-1,164.8	-1,836.6	0.48	0.48	-0.87	
7,463.0	1.68	211.63	6,867.7	2,176.9	-1,167.0	-1,837.7	0.34	0.16	10.73	
Last PZD Survey										
7,518.0	1.68	211.63	6,922.7	2,178.3	-1,168.3	-1,838.5	0.00	0.00	0.00	
Straightline Projection to TD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,810.0	1,683.4	-270.5	-432.0	Last PZD Surface Survey	
7,463.0	6,867.7	-1,167.0	-1,837.7	Last PZD Survey	
7,518.0	6,922.7	-1,168.3	-1,838.5	Straightline Projection to TD	

Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well Monument Ridge B 31A-17-07-95
Project:	Rockies Region	TVD Reference:	Monument Ridge B 31A-17-07-95 @ 5718.8usft (PLAN
Site:	Monument Ridge B	MD Reference:	Monument Ridge B 31A-17-07-95 @ 5718.8usft (PLAN
Well:	Monument Ridge B 31A-17-07-95	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	MasterDB

Checked By: _____ Approved By: _____ Date: _____



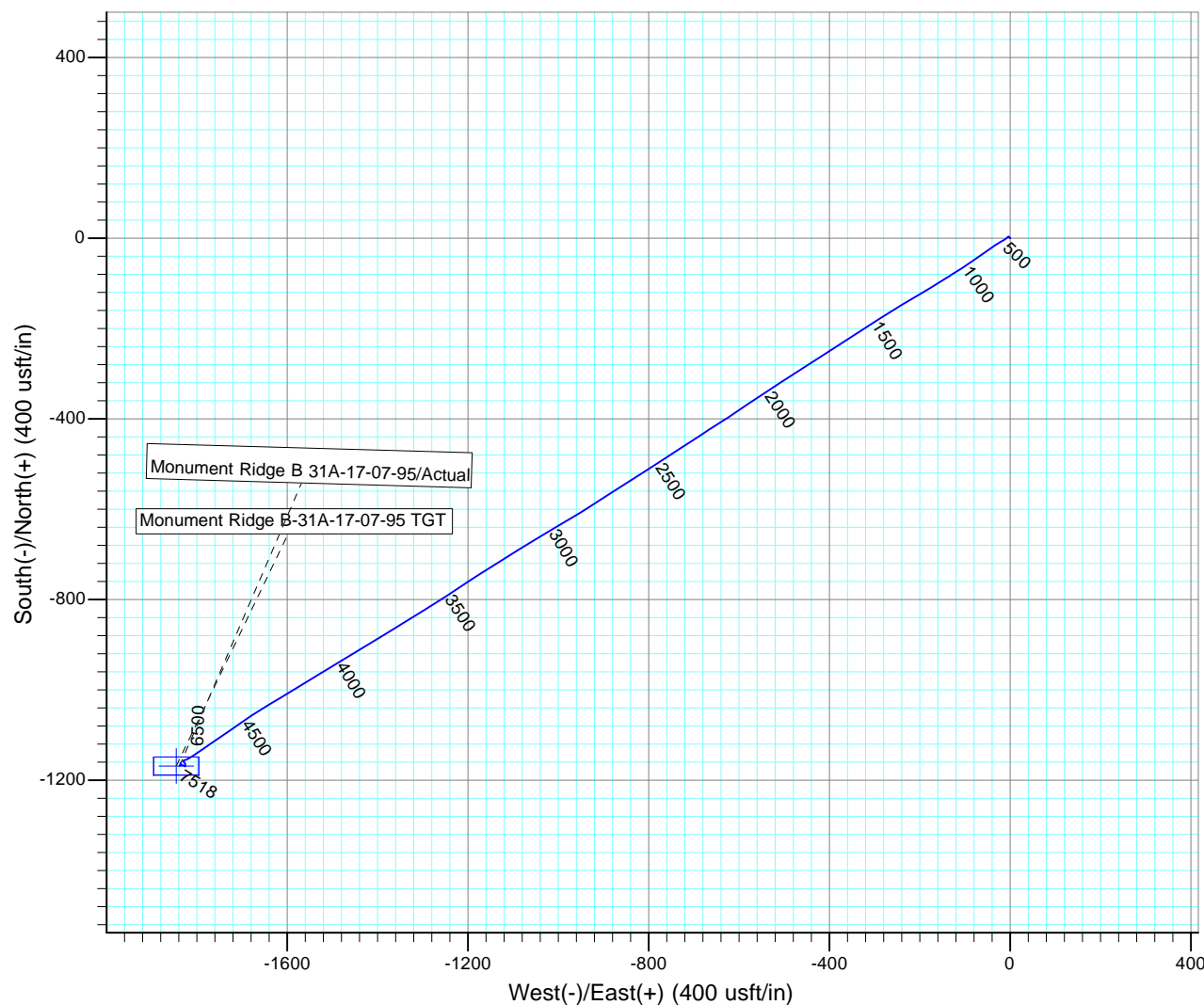
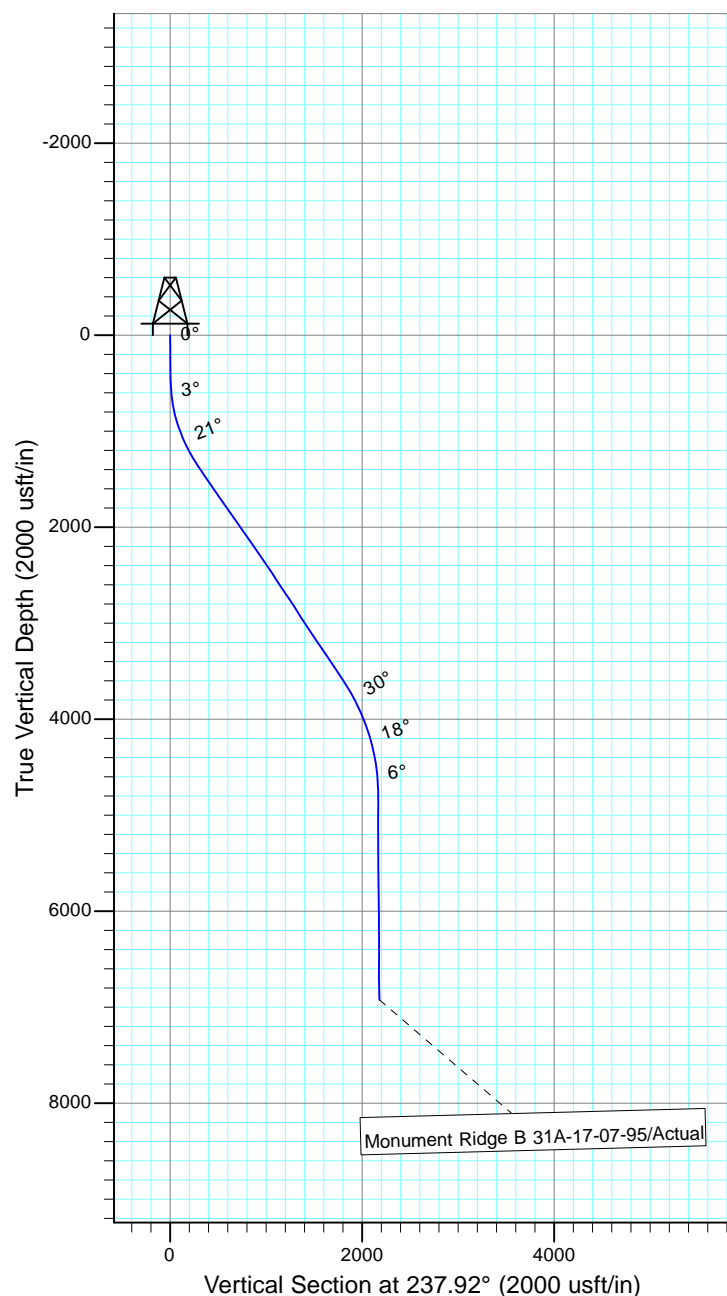
Project: Rockies Region
 Site: Monument Ridge B
 Well: Monument Ridge B 31A-17-07-95
 Wellbore: Wellbore #1
 SURVEY: Actual

FINAL SURVEY REPORT



Azimuths to True North
 Magnetic North: 9.79°

Magnetic Field
 Strength: 51600.3snT
 Dip Angle: 65.56°
 Date: 8/1/2016
 Model: IGRF2015



Design: Actual (Monument Ridge B 31A-17-07-95/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 19:03, October 12 2016
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS
 SUPPORTED BY ACTUAL FIELD DATA.