



# **Ursa Operating Company, LLC**

**Rockies Region**

**Monument Ridge B**

**Monument Ridge B 32A-17-07-95**

**Wellbore #1**

**Design: Actual**

## **End Of Well Report**

**03 October, 2016**



<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Monument Ridge B 32A-17-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Monument Ridge B 32A-17-07-95 @ 5718.8usft (PLAN
<b>Site:</b>	Monument Ridge B	<b>MD Reference:</b>	Monument Ridge B 32A-17-07-95 @ 5718.8usft (PLAN
<b>Well:</b>	Monument Ridge B 32A-17-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	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:		Latitude:	
From:	Lat/Long	Easting:		Longitude:	
Position Uncertainty:	0.0 usft	Slot Radius:		Grid Convergence:	
		1,596,716.56 usft		39.4445837	
		2,287,433.43 usft		-108.0235181	
		13-3/16 "		-1.59 °	

Well		Monument Ridge B 32A-17-07-95, SHL: 39.447421173 -108.012276358				
Well Position	+N-S	0.0 usft	Northing:	1,597,661.69 usft	Latitude:	39.4474212
	+E-W	0.0 usft	Easting:	2,290,635.53 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	0.0 215.24

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Survey Program		Date	10/3/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
141.0	1,879.0	Surface (Wellbore #1)	MWD	MWD - Standard	
1,879.0	7,920.0	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
141.0	1.05	308.78	141.0	-0.1	0.8	-1.0	0.74	0.74	0.00
172.0	1.05	303.30	172.0	-0.1	1.1	-1.5	0.32	0.00	-17.68
201.0	1.10	284.45	201.0	0.0	1.4	-2.0	1.23	0.17	-65.00
232.0	1.19	258.12	232.0	0.4	1.4	-2.6	1.71	0.29	-84.94
262.0	1.45	244.33	262.0	0.9	1.1	-3.2	1.36	0.87	-45.97
293.0	2.20	231.93	293.0	1.8	0.6	-4.0	2.72	2.42	-40.00
323.0	3.14	228.46	322.9	3.2	-0.3	-5.1	3.18	3.13	-11.57
354.0	3.96	219.41	353.9	5.1	-1.7	-6.4	3.20	2.65	-29.19
385.0	5.32	215.37	384.8	7.6	-3.7	-7.9	4.51	4.39	-13.03
415.0	6.55	211.19	414.6	10.7	-6.3	-9.6	4.34	4.10	-13.93
446.0	7.56	207.54	445.4	14.5	-9.6	-11.5	3.56	3.26	-11.77
476.0	8.53	209.57	475.1	18.6	-13.3	-13.5	3.37	3.23	6.77
507.0	9.89	209.57	505.7	23.6	-17.6	-15.9	4.39	4.39	0.00
538.0	10.77	211.85	536.2	29.1	-22.4	-18.8	3.13	2.84	7.35
568.0	12.00	213.17	565.6	35.0	-27.4	-22.0	4.19	4.10	4.40
599.0	13.18	216.29	595.8	41.8	-32.9	-25.8	4.39	3.81	10.06
630.0	14.50	214.97	625.9	49.2	-39.0	-30.1	4.38	4.26	-4.26
660.0	15.18	216.08	654.9	56.9	-45.2	-34.6	2.46	2.27	3.70
690.0	16.00	216.33	683.8	64.9	-51.7	-39.4	2.74	2.73	0.83
720.0	16.67	215.89	712.6	73.4	-58.5	-44.3	2.27	2.23	-1.47

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<b>Design:</b>	Actual	<b>Database:</b>	MasterDB

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
751.0	17.93	215.10	742.2	82.6	-66.0	-49.7	4.13	4.06	-2.55
781.0	18.94	213.21	770.7	92.1	-73.9	-55.0	3.91	3.37	-6.30
811.0	19.86	214.97	799.0	102.0	-82.1	-60.6	3.63	3.07	5.87
854.0	21.49	214.49	839.2	117.2	-94.6	-69.2	3.81	3.79	-1.12
897.0	23.20	213.78	879.0	133.6	-108.1	-78.4	4.03	3.98	-1.65
939.0	24.41	213.81	917.4	150.5	-122.2	-87.8	2.88	2.88	0.07
982.0	25.31	216.02	956.4	168.6	-137.0	-98.2	3.01	2.09	5.14
1,025.0	26.94	214.97	995.0	187.5	-152.5	-109.2	3.94	3.79	-2.44
1,068.0	28.09	216.58	1,033.1	207.4	-168.6	-120.8	3.18	2.67	3.74
1,111.0	29.62	216.38	1,070.8	228.1	-185.3	-133.1	3.57	3.56	-0.47
1,153.0	30.67	215.23	1,107.1	249.2	-202.4	-145.5	2.85	2.50	-2.74
1,196.0	32.21	217.26	1,143.8	271.6	-220.5	-158.7	4.35	3.58	4.72
1,239.0	34.10	216.77	1,179.8	295.1	-239.2	-172.9	4.44	4.40	-1.14
1,281.0	35.51	216.99	1,214.3	319.1	-258.4	-187.3	3.37	3.36	0.52
1,324.0	36.96	216.03	1,249.0	344.5	-278.8	-202.4	3.62	3.37	-2.23
1,367.0	38.41	215.89	1,283.0	370.8	-300.1	-217.8	3.38	3.37	-0.33
1,410.0	39.95	216.33	1,316.3	398.0	-322.1	-233.8	3.64	3.58	1.02
1,452.0	40.39	215.94	1,348.4	425.1	-343.9	-249.8	1.21	1.05	-0.93
1,495.0	40.14	214.94	1,381.2	452.8	-366.6	-265.9	1.61	-0.58	-2.33
1,538.0	40.02	214.46	1,414.1	480.5	-389.3	-281.7	0.77	-0.28	-1.12
1,580.0	40.87	215.85	1,446.1	507.8	-411.6	-297.4	2.95	2.02	3.31
1,623.0	40.87	214.18	1,478.6	535.9	-434.7	-313.5	2.54	0.00	-3.88
1,666.0	41.13	213.61	1,511.1	564.1	-458.1	-329.3	1.06	0.60	-1.33
1,708.0	40.65	213.48	1,542.8	591.6	-481.0	-344.4	1.16	-1.14	-0.31
1,751.0	40.74	214.00	1,575.4	619.6	-504.3	-360.0	0.82	0.21	1.21
1,794.0	41.19	213.93	1,607.9	647.8	-527.7	-375.8	1.05	1.05	-0.16
1,837.0	41.70	213.43	1,640.1	676.3	-551.4	-391.6	1.41	1.19	-1.16

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<b>Design:</b>	Actual	<b>Database:</b>	MasterDB

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
1,879.0	41.70	214.00	1,671.5	704.2	-574.6	-407.1	0.90	0.00	1.36	
Last PZD Surface Survey										
1,956.0	42.41	213.26	1,728.7	755.7	-617.6	-435.6	1.12	0.92	-0.96	
1,999.0	41.70	212.77	1,760.6	784.5	-641.7	-451.3	1.82	-1.65	-1.14	
2,084.0	40.34	215.50	1,824.7	840.3	-687.9	-482.6	2.65	-1.60	3.21	
2,170.0	41.04	216.60	1,889.9	896.3	-733.2	-515.6	1.17	0.81	1.28	
2,255.0	41.57	215.81	1,953.8	952.4	-778.5	-548.7	0.87	0.62	-0.93	
2,340.0	41.88	216.55	2,017.2	1,009.0	-824.1	-582.1	0.68	0.36	0.87	
2,426.0	42.28	215.94	2,081.1	1,066.6	-870.6	-616.2	0.67	0.47	-0.71	
2,511.0	41.62	214.93	2,144.3	1,123.4	-916.9	-649.2	1.11	-0.78	-1.19	
2,596.0	42.71	215.41	2,207.3	1,180.5	-963.6	-682.0	1.34	1.28	0.56	
2,681.0	42.10	214.93	2,270.0	1,237.8	-1,010.4	-715.0	0.81	-0.72	-0.56	
2,767.0	43.11	215.63	2,333.3	1,296.0	-1,057.9	-748.7	1.30	1.17	0.81	
2,852.0	42.14	215.45	2,395.9	1,353.6	-1,104.8	-782.1	1.15	-1.14	-0.21	
2,937.0	41.88	214.62	2,459.0	1,410.5	-1,151.3	-814.8	0.72	-0.31	-0.98	
3,023.0	40.74	214.49	2,523.6	1,467.3	-1,198.1	-847.0	1.33	-1.33	-0.15	
3,108.0	41.44	214.62	2,587.7	1,523.1	-1,244.1	-878.7	0.83	0.82	0.15	
3,193.0	40.78	215.32	2,651.7	1,579.0	-1,289.9	-910.7	0.95	-0.78	0.82	
3,279.0	41.36	215.21	2,716.6	1,635.5	-1,336.0	-943.3	0.68	0.67	-0.13	
3,364.0	40.56	216.11	2,780.8	1,691.2	-1,381.3	-975.8	1.17	-0.94	1.06	
3,450.0	41.13	217.26	2,845.8	1,747.4	-1,426.4	-1,009.4	1.10	0.66	1.34	
3,535.0	40.08	217.04	2,910.4	1,802.7	-1,470.5	-1,042.8	1.25	-1.24	-0.26	
3,621.0	40.61	215.54	2,975.9	1,858.4	-1,515.4	-1,075.8	1.29	0.62	-1.74	
3,706.0	41.57	216.90	3,040.0	1,914.3	-1,560.4	-1,108.8	1.54	1.13	1.60	
3,791.0	40.43	215.50	3,104.1	1,970.0	-1,605.4	-1,141.7	1.72	-1.34	-1.65	
3,877.0	41.22	217.08	3,169.2	2,026.2	-1,650.8	-1,175.0	1.51	0.92	1.84	
3,962.0	42.06	215.94	3,232.7	2,082.7	-1,696.1	-1,208.6	1.33	0.99	-1.34	

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4,047.0	40.80	215.47	3,296.5	2,138.9	-1,741.8	-1,241.4	1.53	-1.48	-0.55	
4,133.0	41.35	215.76	3,361.3	2,195.4	-1,787.8	-1,274.3	0.68	0.64	0.34	
4,218.0	41.75	214.22	3,424.9	2,251.8	-1,833.9	-1,306.6	1.29	0.47	-1.81	
4,304.0	42.10	214.49	3,488.9	2,309.2	-1,881.4	-1,339.1	0.46	0.41	0.31	
4,389.0	40.96	213.78	3,552.5	2,365.6	-1,928.0	-1,370.7	1.45	-1.34	-0.84	
4,474.0	40.52	216.73	3,616.9	2,421.1	-1,973.3	-1,402.7	2.32	-0.52	3.47	
4,560.0	40.78	217.04	3,682.2	2,477.1	-2,018.1	-1,436.3	0.38	0.30	0.36	
4,645.0	39.42	216.73	3,747.2	2,531.8	-2,061.9	-1,469.2	1.62	-1.60	-0.36	
4,731.0	38.50	216.07	3,814.1	2,585.8	-2,105.4	-1,501.3	1.17	-1.07	-0.77	
4,817.0	36.85	214.80	3,882.1	2,638.4	-2,148.2	-1,531.8	2.12	-1.92	-1.48	
4,902.0	36.04	214.53	3,950.5	2,688.9	-2,189.8	-1,560.5	0.97	-0.95	-0.32	
4,987.0	34.50	213.74	4,019.9	2,738.0	-2,230.4	-1,588.0	1.89	-1.81	-0.93	
5,073.0	33.05	213.56	4,091.4	2,785.8	-2,270.2	-1,614.5	1.69	-1.69	-0.21	
5,158.0	30.94	213.87	4,163.5	2,830.8	-2,307.7	-1,639.5	2.49	-2.48	0.36	
5,243.0	29.58	212.16	4,236.9	2,873.6	-2,343.6	-1,662.9	1.89	-1.60	-2.01	
5,329.0	27.91	211.24	4,312.3	2,914.8	-2,378.7	-1,684.6	2.01	-1.94	-1.07	
5,414.0	24.92	214.44	4,388.4	2,952.6	-2,410.5	-1,705.1	3.89	-3.52	3.76	
5,500.0	21.80	214.97	4,467.3	2,986.7	-2,438.6	-1,724.5	3.64	-3.63	0.62	
5,585.0	19.12	214.49	4,547.0	3,016.4	-2,463.0	-1,741.4	3.16	-3.15	-0.56	
5,670.0	16.88	214.88	4,627.8	3,042.7	-2,484.6	-1,756.3	2.64	-2.64	0.46	
5,733.4	15.02	214.37	4,688.7	3,060.1	-2,498.9	-1,766.2	2.95	-2.94	-0.80	
Monument Ridge B 32A-17-07-95 TGT										
5,755.0	14.38	214.17	4,709.7	3,065.6	-2,503.4	-1,769.3	2.95	-2.94	-0.94	
5,841.0	11.56	216.51	4,793.5	3,084.9	-2,519.2	-1,780.4	3.33	-3.28	2.72	
5,926.0	9.62	215.72	4,877.0	3,100.5	-2,531.8	-1,789.7	2.29	-2.28	-0.93	
6,011.0	6.64	213.70	4,961.1	3,112.5	-2,541.7	-1,796.5	3.52	-3.51	-2.38	
6,097.0	3.85	216.21	5,046.8	3,120.4	-2,548.1	-1,801.0	3.25	-3.24	2.92	

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6,182.0	1.27	214.31	5,131.7	3,124.2	-2,551.2	-1,803.2	3.04	-3.04	-2.24	
6,268.0	1.23	226.84	5,217.7	3,126.0	-2,552.6	-1,804.4	0.32	-0.05	14.57	
6,353.0	1.25	230.07	5,302.6	3,127.8	-2,553.9	-1,805.8	0.09	0.02	3.80	
6,439.0	0.56	320.35	5,388.6	3,128.6	-2,554.1	-1,806.8	1.60	-0.80	104.98	
6,524.0	0.48	288.40	5,473.6	3,128.6	-2,553.7	-1,807.4	0.35	-0.09	-37.59	
6,610.0	0.70	230.09	5,559.6	3,129.2	-2,553.9	-1,808.1	0.70	0.26	-67.80	
6,695.0	1.32	241.03	5,644.6	3,130.6	-2,554.7	-1,809.4	0.76	0.73	12.87	
6,781.0	0.62	296.09	5,730.6	3,131.6	-2,555.0	-1,810.7	1.27	-0.81	64.02	
6,866.0	1.71	44.81	5,815.6	3,130.4	-2,553.9	-1,810.2	2.35	1.28	127.91	
6,951.0	1.93	56.64	5,900.5	3,127.8	-2,552.2	-1,808.1	0.51	0.26	13.92	
7,037.0	1.71	68.46	5,986.5	3,125.4	-2,551.0	-1,805.7	0.50	-0.26	13.74	
7,122.0	1.01	61.43	6,071.5	3,123.6	-2,550.1	-1,803.9	0.85	-0.82	-8.27	
7,207.0	0.48	68.72	6,156.5	3,122.7	-2,549.6	-1,802.9	0.63	-0.62	8.58	
7,293.0	0.79	150.37	6,242.5	3,122.6	-2,550.0	-1,802.3	1.00	0.36	94.94	
7,378.0	1.41	187.90	6,327.5	3,123.8	-2,551.6	-1,802.1	1.08	0.73	44.15	
7,464.0	1.83	202.47	6,413.4	3,126.1	-2,553.9	-1,802.8	0.68	0.49	16.94	
7,549.0	2.37	215.89	6,498.4	3,129.2	-2,556.6	-1,804.3	0.86	0.64	15.79	
7,634.0	2.29	216.99	6,583.3	3,132.6	-2,559.3	-1,806.4	0.11	-0.09	1.29	
7,720.0	2.20	215.85	6,669.2	3,136.0	-2,562.1	-1,808.4	0.12	-0.10	-1.33	
7,805.0	2.11	227.80	6,754.2	3,139.1	-2,564.4	-1,810.5	0.54	-0.11	14.06	
7,865.0	2.02	223.06	6,814.1	3,141.3	-2,565.9	-1,812.0	0.32	-0.15	-7.90	
Last PZD Survey										
7,920.0	2.02	223.06	6,869.1	3,143.2	-2,567.4	-1,813.4	0.00	0.00	0.00	
Straight Line Projection to TD										

<b>Company:</b>	Ursa Operating Company, LLC	<b>Local Co-ordinate Reference:</b>	Well Monument Ridge B 32A-17-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Monument Ridge B 32A-17-07-95 @ 5718.8usft (PLAN
<b>Site:</b>	Monument Ridge B	<b>MD Reference:</b>	Monument Ridge B 32A-17-07-95 @ 5718.8usft (PLAN
<b>Well:</b>	Monument Ridge B 32A-17-07-95	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual	<b>Database:</b>	MasterDB

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,879.0	1,671.5	-574.6	-407.1	Last PZD Surface Survey

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





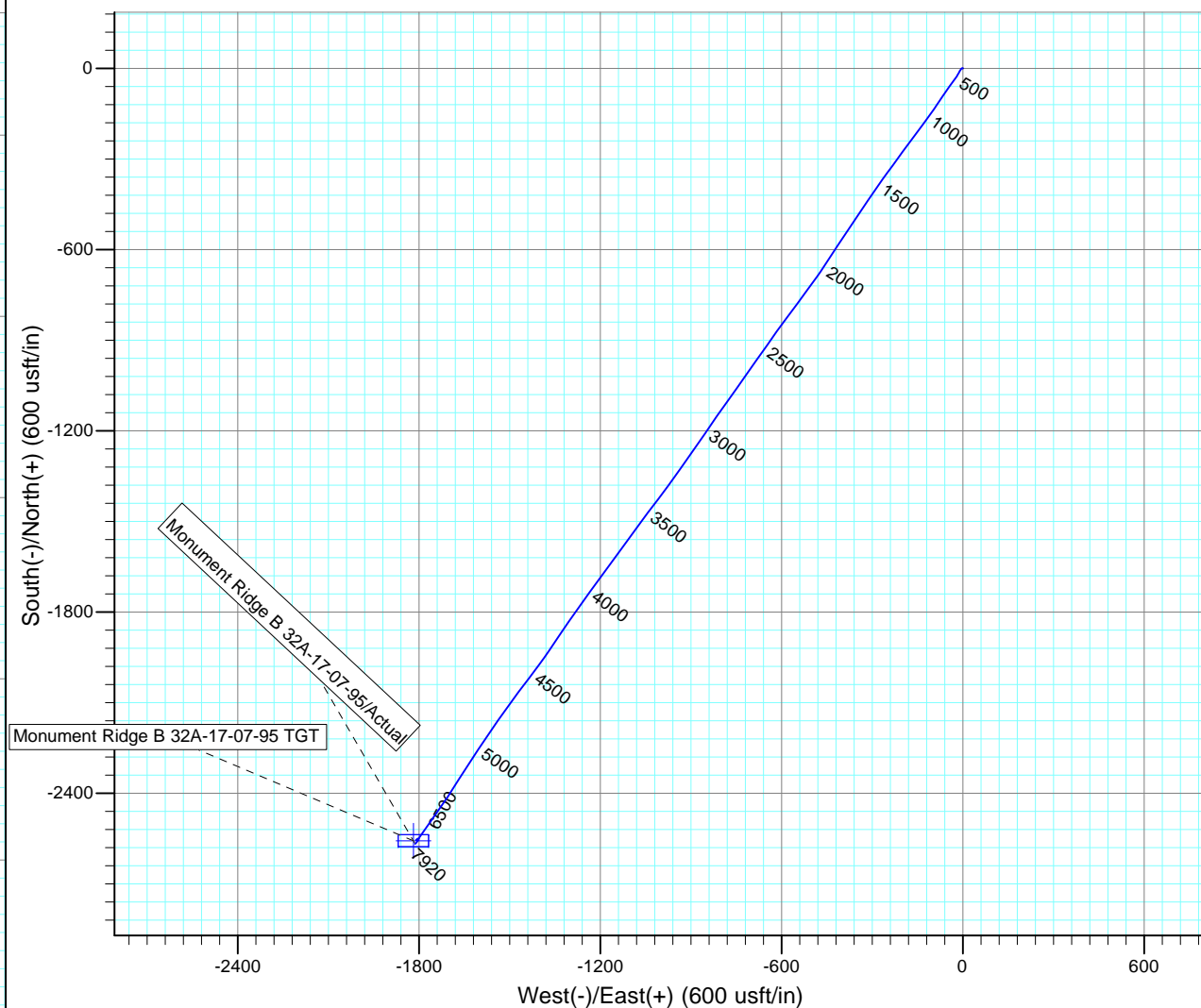
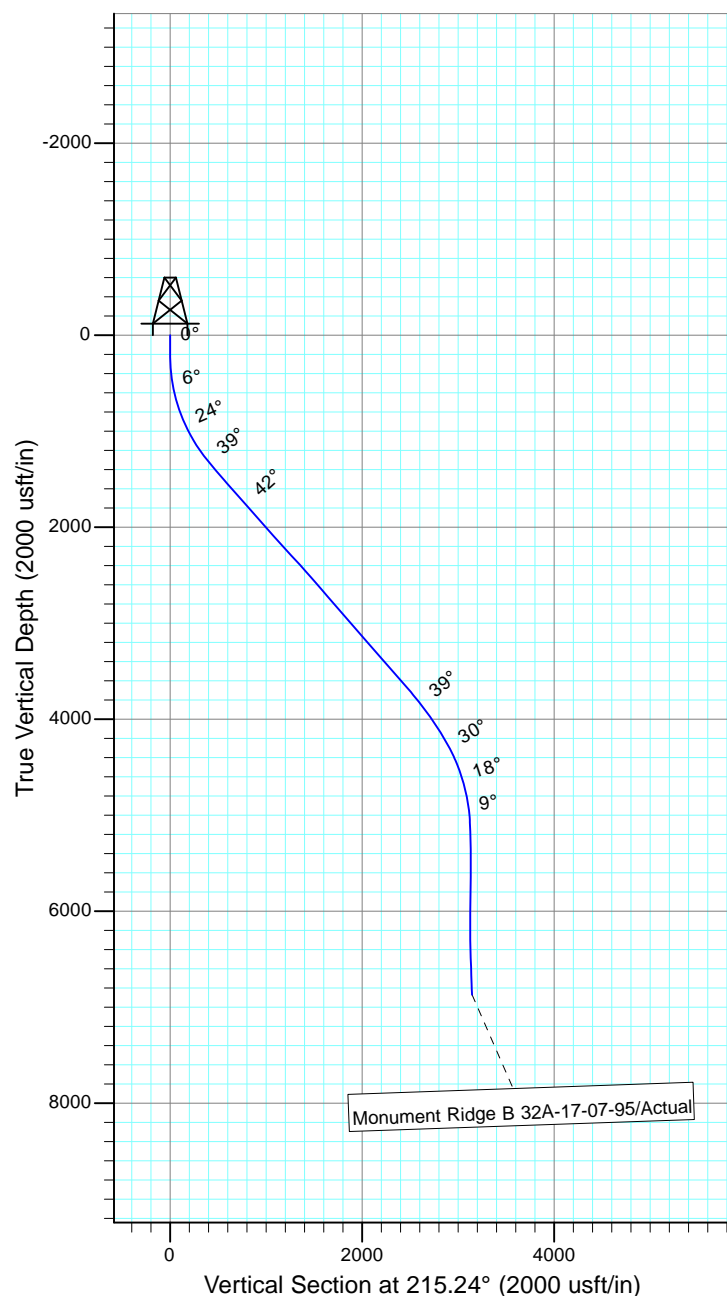
Project: Rockies Region  
Site: Monument Ridge B  
Well: Monument Ridge B 32A-17-07-95  
Wellbore: Wellbore #1  
SURVEY: Actual

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 32A-17-07-95/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 18:10, October 03 2016  
*THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS SUPPORTED BY ACTUAL FIELD DATA.*