



## **Ursa Operating Company, LLC**

**Rockies Region**

**Monument Ridge B**

**Monument Ridge B 31D-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 31D-17-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Monument Ridge B 31D-17-07-95 @ 5718.8usft (PLAN
<b>Site:</b>	Monument Ridge B	<b>MD Reference:</b>	Monument Ridge B 31D-17-07-95 @ 5718.8usft (PLAN
<b>Well:</b>	Monument Ridge B 31D-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

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

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

Well		Monument Ridge B 31D-17-07-95, SHL: 39.447448615 -108.012276360				
Well Position	+N-S	0.0 usft	Northing:	1,597,671.68 usft	Latitude:	39.4474486
	+E-W	0.0 usft	Easting:	2,290,635.81 usft	Longitude:	-108.0122764
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,718.8 usft	Ground Level:	5,701.8 usft

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

<b>Design</b>	Actual			
<b>Audit Notes:</b>				
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b> 0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	220.19

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

Survey Program		Date 10/3/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
110.0	1,837.0	Surface (Wellbore #1)	MWD	MWD - Standard
1,913.0	7,790.0	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
110.0	0.59	16.54	110.0	-0.5	0.5	0.2	0.54	0.54	0.00
141.0	0.90	48.54	141.0	-0.9	0.9	0.4	1.64	1.00	103.23
171.0	0.88	56.15	171.0	-1.4	1.1	0.8	0.40	-0.07	25.37
201.0	0.48	227.45	201.0	-1.5	1.2	0.9	4.52	-1.33	571.00
232.0	1.35	230.73	232.0	-1.0	0.9	0.5	2.81	2.81	10.58
262.0	1.54	231.85	262.0	-0.2	0.4	-0.1	0.64	0.63	3.73
293.0	1.76	216.95	293.0	0.7	-0.2	-0.7	1.55	0.71	-48.06
323.0	1.87	208.28	322.9	1.6	-1.0	-1.2	0.98	0.37	-28.90
354.0	2.11	194.14	353.9	2.6	-2.0	-1.6	1.76	0.77	-45.61
385.0	2.13	195.05	384.9	3.6	-3.2	-1.9	0.13	0.06	2.94
415.0	2.24	191.24	414.9	4.7	-4.3	-2.2	0.61	0.37	-12.70
446.0	2.77	193.48	445.9	5.9	-5.6	-2.5	1.74	1.71	7.23
476.0	3.30	202.62	475.8	7.3	-7.1	-3.0	2.39	1.77	30.47
507.0	3.69	209.08	506.8	9.2	-8.8	-3.8	1.79	1.26	20.84
538.0	4.54	211.77	537.7	11.3	-10.7	-4.9	2.81	2.74	8.68
568.0	5.12	215.44	567.6	13.9	-12.8	-6.3	2.19	1.93	12.23
599.0	6.20	221.83	598.4	16.9	-15.2	-8.2	4.03	3.48	20.61
630.0	7.51	224.51	629.2	20.6	-17.9	-10.8	4.35	4.23	8.65
660.0	8.79	225.21	658.9	24.8	-20.9	-13.8	4.28	4.27	2.33
690.0	9.84	225.08	688.5	29.7	-24.3	-17.2	3.50	3.50	-0.43

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<b>Well:</b>	Monument Ridge B 31D-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

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
720.0	10.77	221.83	718.0	35.0	-28.2	-20.9	3.65	3.10	-10.83	
751.0	11.12	219.58	748.5	40.9	-32.7	-24.7	1.78	1.13	-7.26	
781.0	11.95	218.57	777.8	46.9	-37.3	-28.5	2.85	2.77	-3.37	
811.0	13.14	218.71	807.1	53.4	-42.4	-32.6	3.97	3.97	0.47	
854.0	15.07	220.02	848.8	63.9	-50.5	-39.2	4.55	4.49	3.05	
897.0	16.22	221.83	890.2	75.5	-59.3	-46.8	2.91	2.67	4.21	
939.0	17.58	222.92	930.4	87.7	-68.3	-55.1	3.32	3.24	2.60	
982.0	18.68	221.96	971.3	101.1	-78.2	-64.1	2.65	2.56	-2.23	
1,025.0	20.13	223.32	1,011.8	115.3	-88.7	-73.8	3.53	3.37	3.16	
1,068.0	21.05	220.02	1,052.1	130.5	-100.0	-83.8	3.44	2.14	-7.67	
1,111.0	22.30	220.65	1,092.1	146.3	-112.1	-94.1	2.96	2.91	1.47	
1,153.0	23.51	221.25	1,130.7	162.7	-124.4	-104.8	2.93	2.88	1.43	
1,196.0	24.70	219.32	1,170.0	180.2	-137.8	-116.2	3.32	2.77	-4.49	
1,239.0	26.27	219.84	1,208.8	198.7	-152.1	-128.0	3.69	3.65	1.21	
1,281.0	27.82	218.75	1,246.2	217.8	-166.8	-140.0	3.87	3.69	-2.60	
1,324.0	29.33	220.97	1,284.0	238.4	-182.6	-153.2	4.29	3.51	5.16	
1,367.0	30.53	220.48	1,321.2	259.8	-198.9	-167.2	2.85	2.79	-1.14	
1,409.0	31.73	220.64	1,357.2	281.6	-215.4	-181.3	2.86	2.86	0.38	
1,452.0	33.33	219.59	1,393.4	304.7	-233.1	-196.2	3.95	3.72	-2.44	
1,495.0	35.11	221.56	1,429.0	328.9	-251.4	-212.0	4.88	4.14	4.58	
1,538.0	36.64	220.86	1,463.8	354.1	-270.4	-228.6	3.68	3.56	-1.63	
1,580.0	37.93	220.95	1,497.3	379.5	-289.6	-245.2	3.07	3.07	0.21	
1,623.0	39.68	220.60	1,530.8	406.4	-310.0	-262.8	4.10	4.07	-0.81	
1,666.0	40.47	219.45	1,563.7	434.1	-331.2	-280.6	2.52	1.84	-2.67	
1,708.0	40.87	219.76	1,595.5	461.5	-352.3	-298.1	1.07	0.95	0.74	
1,751.0	40.69	219.98	1,628.1	489.6	-373.9	-316.1	0.54	-0.42	0.51	
1,794.0	40.43	219.54	1,660.8	517.5	-395.4	-334.0	0.90	-0.60	-1.02	

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Survey										
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1,837.0	40.47	220.36	1,693.5	545.4	-416.7	-351.9	1.24	0.09	1.91	
Last PZD Surface Survey										
1,913.0	40.08	220.29	1,751.5	594.6	-454.2	-383.7	0.52	-0.51	-0.09	
1,998.0	40.34	217.96	1,816.4	649.4	-496.8	-418.3	1.80	0.31	-2.74	
2,083.0	40.39	217.87	1,881.1	704.4	-540.2	-452.1	0.09	0.06	-0.11	
2,169.0	41.00	216.73	1,946.3	760.4	-584.8	-486.1	1.12	0.71	-1.33	
2,254.0	40.25	218.18	2,010.9	815.7	-628.7	-519.7	1.42	-0.88	1.71	
2,340.0	40.74	219.54	2,076.3	871.5	-672.2	-554.8	1.17	0.57	1.58	
2,425.0	40.17	218.53	2,140.9	926.7	-715.1	-589.5	1.02	-0.67	-1.19	
2,510.0	40.96	219.41	2,205.5	981.9	-758.0	-624.3	1.15	0.93	1.04	
2,595.0	40.52	220.42	2,269.9	1,037.4	-800.6	-659.9	0.93	-0.52	1.19	
2,681.0	39.99	220.82	2,335.6	1,093.0	-842.8	-696.1	0.69	-0.62	0.47	
2,766.0	38.98	219.37	2,401.2	1,147.0	-884.1	-730.9	1.61	-1.19	-1.71	
2,851.0	39.51	219.37	2,467.0	1,200.8	-925.7	-765.0	0.62	0.62	0.00	
2,937.0	40.17	219.32	2,533.0	1,255.9	-968.3	-799.9	0.77	0.77	-0.06	
3,022.0	40.21	220.02	2,597.9	1,310.7	-1,010.5	-834.9	0.53	0.05	0.82	
3,108.0	40.96	219.32	2,663.3	1,366.7	-1,053.6	-870.6	1.02	0.87	-0.81	
3,193.0	40.61	219.63	2,727.6	1,422.2	-1,096.4	-905.9	0.48	-0.41	0.36	
3,278.0	40.12	218.35	2,792.4	1,477.2	-1,139.2	-940.6	1.13	-0.58	-1.51	
3,364.0	40.45	219.20	2,858.0	1,532.8	-1,182.6	-975.4	0.75	0.38	0.99	
3,449.0	39.64	218.53	2,923.1	1,587.5	-1,225.1	-1,009.7	1.08	-0.95	-0.79	
3,535.0	39.33	220.64	2,989.4	1,642.2	-1,267.3	-1,044.6	1.60	-0.36	2.45	
3,620.0	38.54	219.94	3,055.6	1,695.6	-1,308.0	-1,079.1	1.06	-0.93	-0.82	
3,705.0	39.11	219.54	3,121.8	1,748.9	-1,349.0	-1,113.2	0.73	0.67	-0.47	
3,791.0	39.20	218.35	3,188.5	1,803.2	-1,391.2	-1,147.3	0.88	0.10	-1.38	
3,876.0	39.86	220.46	3,254.0	1,857.2	-1,433.0	-1,181.6	1.76	0.78	2.48	
3,961.0	39.33	220.07	3,319.5	1,911.4	-1,474.4	-1,216.7	0.69	-0.62	-0.46	

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Survey										
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4,047.0	38.45	219.10	3,386.5	1,965.4	-1,516.0	-1,251.1	1.24	-1.02	-1.13	
4,132.0	38.32	219.54	3,453.1	2,018.2	-1,556.8	-1,284.5	0.36	-0.15	0.52	
4,218.0	38.85	219.01	3,520.3	2,071.8	-1,598.3	-1,318.5	0.73	0.62	-0.62	
4,303.0	39.33	221.08	3,586.3	2,125.4	-1,639.3	-1,352.9	1.64	0.56	2.44	
4,388.0	40.21	220.95	3,651.6	2,179.8	-1,680.4	-1,388.6	1.04	1.04	-0.15	
4,473.0	40.52	220.60	3,716.4	2,234.8	-1,722.1	-1,424.6	0.45	0.36	-0.41	
4,559.0	40.21	220.64	3,781.9	2,290.5	-1,764.3	-1,460.8	0.36	-0.36	0.05	
4,644.0	39.24	220.16	3,847.3	2,344.8	-1,805.7	-1,496.1	1.20	-1.14	-0.56	
4,729.0	38.36	218.75	3,913.5	2,398.1	-1,846.8	-1,529.9	1.47	-1.04	-1.66	
4,815.0	37.53	218.31	3,981.4	2,450.9	-1,888.2	-1,562.8	1.02	-0.97	-0.51	
4,900.0	34.80	218.74	4,050.0	2,501.1	-1,927.4	-1,594.1	3.23	-3.21	0.51	
4,985.0	33.18	219.28	4,120.4	2,548.6	-1,964.4	-1,624.0	1.94	-1.91	0.64	
5,070.0	31.38	218.31	4,192.3	2,594.0	-1,999.7	-1,652.4	2.20	-2.12	-1.14	
5,156.0	28.21	219.50	4,266.9	2,636.7	-2,033.0	-1,679.3	3.75	-3.69	1.38	
5,241.0	25.88	218.22	4,342.6	2,675.3	-2,063.1	-1,703.5	2.83	-2.74	-1.51	
5,327.0	22.72	219.23	4,421.0	2,710.7	-2,090.7	-1,725.6	3.71	-3.67	1.17	
5,412.0	19.91	220.55	4,500.2	2,741.6	-2,114.4	-1,745.4	3.35	-3.31	1.55	
5,497.0	16.96	217.87	4,580.8	2,768.4	-2,135.2	-1,762.4	3.61	-3.47	-3.15	
5,582.0	14.50	218.71	4,662.6	2,791.5	-2,153.3	-1,776.7	2.91	-2.89	0.99	
5,613.2	13.35	217.76	4,692.9	2,799.0	-2,159.2	-1,781.4	3.76	-3.69	-3.05	
Monument Ridge B 31D-17-07-95 TGT										
5,668.0	11.34	215.63	4,746.4	2,810.7	-2,168.6	-1,788.4	3.76	-3.67	-3.88	
5,753.0	8.35	212.73	4,830.2	2,825.1	-2,180.6	-1,796.6	3.56	-3.52	-3.41	
5,839.0	5.49	217.91	4,915.5	2,835.4	-2,189.1	-1,802.5	3.40	-3.33	6.02	
5,924.0	3.16	225.47	5,000.3	2,841.8	-2,193.9	-1,806.7	2.82	-2.74	8.89	
6,010.0	0.79	201.61	5,086.2	2,844.7	-2,196.1	-1,808.6	2.86	-2.76	-27.74	
6,095.0	0.79	172.08	5,171.2	2,845.7	-2,197.2	-1,808.7	0.47	0.00	-34.74	

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6,180.0	0.92	144.57	5,256.2	2,846.3	-2,198.4	-1,808.2	0.50	0.15	-32.36	
6,266.0	1.05	141.49	5,342.2	2,846.6	-2,199.6	-1,807.3	0.16	0.15	-3.58	
6,351.0	1.27	140.53	5,427.2	2,846.9	-2,200.9	-1,806.3	0.26	0.26	-1.13	
6,437.0	1.05	330.85	5,513.2	2,846.8	-2,200.9	-1,806.0	2.69	-0.26	-197.30	
6,522.0	1.02	304.86	5,598.2	2,846.6	-2,199.8	-1,807.0	0.55	-0.04	-30.58	
6,608.0	1.04	304.57	5,684.1	2,846.7	-2,199.0	-1,808.3	0.02	0.02	-0.34	
6,693.0	0.92	296.27	5,769.1	2,847.0	-2,198.2	-1,809.5	0.22	-0.14	-9.76	
6,778.0	0.88	281.81	5,854.1	2,847.5	-2,197.8	-1,810.8	0.27	-0.05	-17.01	
6,864.0	0.92	258.08	5,940.1	2,848.3	-2,197.8	-1,812.1	0.43	0.05	-27.59	
6,949.0	1.05	226.97	6,025.1	2,849.6	-2,198.5	-1,813.4	0.64	0.15	-36.60	
7,034.0	1.32	208.12	6,110.1	2,851.4	-2,199.8	-1,814.4	0.55	0.32	-22.18	
7,120.0	1.23	135.52	6,196.1	2,852.4	-2,201.4	-1,814.2	1.76	-0.10	-84.42	
7,205.0	0.62	57.29	6,281.1	2,852.1	-2,201.8	-1,813.2	1.48	-0.72	-92.04	
7,290.0	0.66	83.79	6,366.1	2,851.3	-2,201.5	-1,812.3	0.35	0.05	31.18	
7,376.0	0.92	113.90	6,452.0	2,850.7	-2,201.7	-1,811.2	0.56	0.30	35.01	
7,461.0	0.66	107.61	6,537.0	2,850.3	-2,202.1	-1,810.1	0.32	-0.31	-7.40	
7,546.0	0.40	190.62	6,622.0	2,850.4	-2,202.6	-1,809.7	0.86	-0.31	97.66	
7,632.0	0.83	221.04	6,708.0	2,851.3	-2,203.3	-1,810.1	0.61	0.50	35.37	
7,717.0	0.66	216.29	6,793.0	2,852.4	-2,204.2	-1,810.8	0.21	-0.20	-5.59	
7,735.0	0.66	232.99	6,811.0	2,852.6	-2,204.3	-1,811.0	1.06	0.00	92.78	
Last PZD Survey										
7,790.0	0.66	232.99	6,866.0	2,853.2	-2,204.7	-1,811.5	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 31D-17-07-95
<b>Project:</b>	Rockies Region	<b>TVD Reference:</b>	Monument Ridge B 31D-17-07-95 @ 5718.8usft (PLAN
<b>Site:</b>	Monument Ridge B	<b>MD Reference:</b>	Monument Ridge B 31D-17-07-95 @ 5718.8usft (PLAN
<b>Well:</b>	Monument Ridge B 31D-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)	
1,837.0	1,693.5	-416.7	-351.9	Last PZD Surface Survey
7,735.0	6,811.0	-2,204.3	-1,811.0	Last PZD Survey
7,790.0	6,866.0	-2,204.7	-1,811.5	Straight Line Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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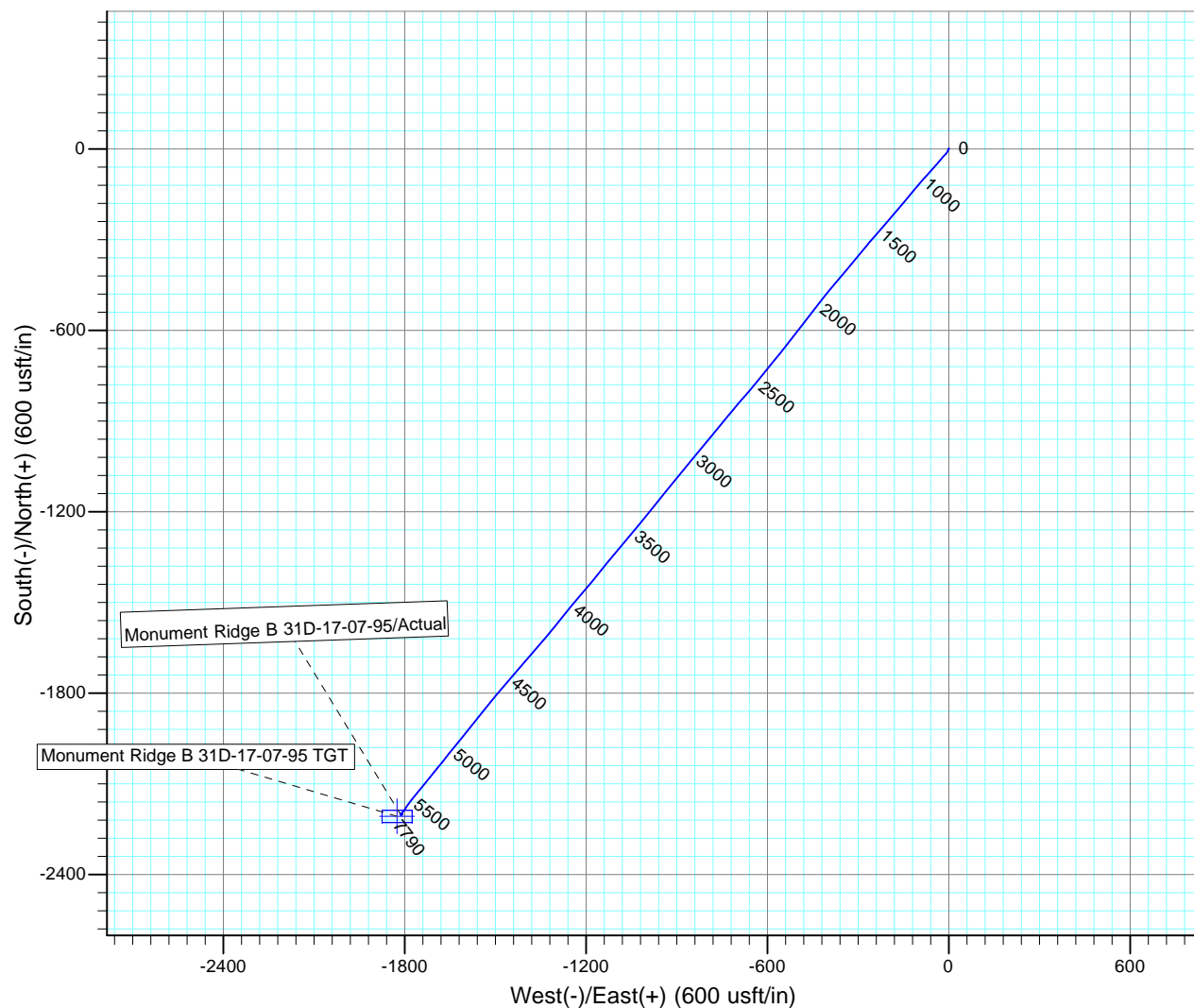
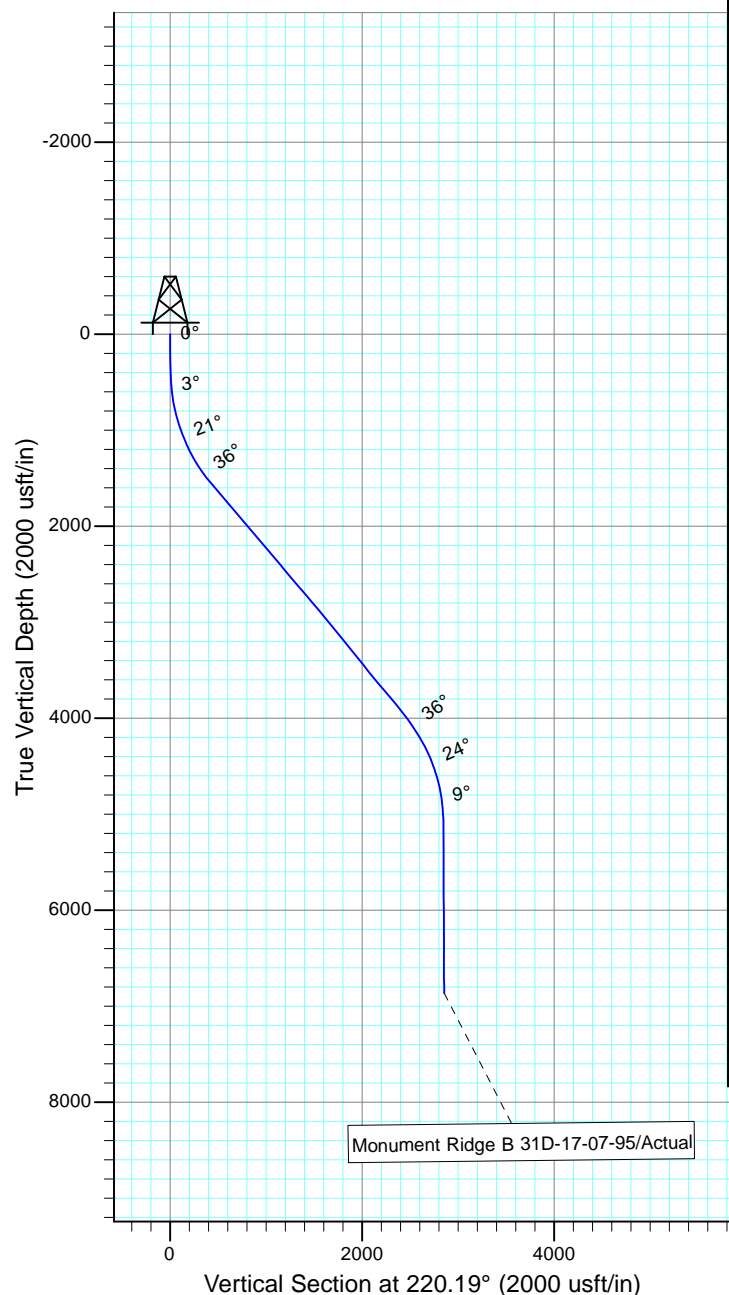
Project: Rockies Region  
 Site: Monument Ridge B  
 Well: Monument Ridge B 31D-17-07-95  
 Wellbore: Wellbore #1  
 SURVEY: Actual

# 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 31D-17-07-95/Wellbore #1)

Created By: Sarah Webb-Hudson Date: 18:39, October 03 2016  
 THIS SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND IS  
 SUPPORTED BY ACTUAL FIELD DATA.