



Ursa Operating Company, LLC

Rio Blanco County, Colorado

BR C-240

BR C-240 32D-24-2-98

Wellbore #1

Design: Actual

End of Well Report

12 June, 2017



Company:	Ursa Operating Company, LLC	Local Co-ordinate Reference:	Well BR C-24O 32D-24-2-98
Project:	Rio Blanco County, Colorado	TVD Reference:	BR C-24O 32D-24-2-98 @ 6325.5usft (Plan KB)
Site:	BR C-24O	MD Reference:	BR C-24O 32D-24-2-98 @ 6325.5usft (Plan KB)
Well:	BR C-24O 32D-24-2-98	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Project	Rio Blanco County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	BR C-24O		
Site Position:		Northing:	1,203,233.71 usft
From:	Map	Easting:	2,203,189.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	39.856238800
		Longitude:	-108.338695300
		Grid Convergence:	-1.83 °

Well	BR C-24O 32D-24-2-98, SHL: 39.8562896, -108.3388986		
Well Position	+N/-S	0.0 usft	Northing: 1,203,254.03 usft
	+E/-W	0.0 usft	Easting: 2,203,132.55 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	6,325.5 usft
		Latitude:	39.856289600
		Longitude:	-108.338898600
		Ground Level:	6,304.5 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/12/2017	9.90	65.82	51,677

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	337.66

Survey Program	Date	6/12/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
146.0	10,268.0	Actual (Wellbore #1)	MWD	MWD - Standard

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

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
146.0	0.35	92.58	146.0	-0.2	0.0	0.4	0.24	0.24	0.00
232.0	0.09	150.50	232.0	-0.4	-0.1	0.7	0.36	-0.30	67.35
319.0	0.31	198.18	319.0	-0.6	-0.4	0.7	0.30	0.25	54.80
409.0	0.31	195.72	409.0	-1.0	-0.8	0.6	0.01	0.00	-2.73
499.0	0.57	214.57	499.0	-1.4	-1.4	0.2	0.33	0.29	20.94
591.0	0.40	213.08	591.0	-1.9	-2.1	-0.2	0.19	-0.18	-1.62
681.0	0.97	337.80	681.0	-1.3	-1.6	-0.7	1.38	0.63	138.58
772.0	3.30	335.12	771.9	2.1	1.4	-2.0	2.56	2.56	-2.95
862.0	5.89	331.73	861.6	9.3	7.9	-5.3	2.89	2.88	-3.77
955.0	7.87	334.50	953.9	20.4	17.8	-10.3	2.16	2.13	2.98
1,046.0	9.36	338.06	1,043.9	34.0	30.3	-15.8	1.74	1.64	3.91
1,141.0	11.25	337.31	1,137.4	51.0	46.0	-22.2	1.99	1.99	-0.79
1,236.0	14.94	338.94	1,229.9	72.5	66.0	-30.2	3.90	3.88	1.72
1,331.0	18.19	338.54	1,320.9	99.6	91.2	-40.0	3.42	3.42	-0.42
1,426.0	20.30	338.28	1,410.6	130.9	120.3	-51.6	2.22	2.22	-0.27
1,520.0	23.73	341.44	1,497.8	166.1	153.4	-63.6	3.86	3.65	3.36
1,615.0	27.91	340.13	1,583.3	207.4	192.5	-77.3	4.44	4.40	-1.38
1,710.0	28.87	339.51	1,666.8	252.5	234.9	-92.9	1.06	1.01	-0.65
1,805.0	29.14	338.15	1,749.9	298.6	277.8	-109.5	0.75	0.28	-1.43
1,900.0	29.00	335.99	1,833.0	344.7	320.3	-127.5	1.11	-0.15	-2.27
1,994.0	28.78	336.30	1,915.3	390.1	361.9	-145.8	0.28	-0.23	0.33
2,090.0	28.39	337.14	1,999.6	436.1	404.1	-164.0	0.58	-0.41	0.87
2,185.0	28.13	339.11	2,083.2	481.0	445.8	-180.8	1.02	-0.27	2.07
2,279.0	28.34	338.28	2,166.0	525.5	487.2	-196.9	0.47	0.22	-0.88
2,374.0	29.09	337.53	2,249.4	571.1	529.5	-214.1	0.88	0.79	-0.79
2,468.0	29.22	336.35	2,331.5	616.9	571.7	-232.0	0.63	0.14	-1.26

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Well:	BR C-24O 32D-24-2-98	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM 5000.1 Single User Db

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
2,563.0	28.74	337.36	2,414.6	663.0	614.0	-250.1	0.72	-0.51	1.06	
2,658.0	27.33	339.86	2,498.4	707.6	655.5	-266.4	1.93	-1.48	2.63	
2,753.0	26.67	337.31	2,583.1	750.7	695.7	-282.2	1.40	-0.69	-2.68	
2,848.0	26.77	338.89	2,667.9	793.4	735.3	-298.1	0.76	0.11	1.66	
2,943.0	26.85	339.16	2,752.7	836.3	775.3	-313.4	0.15	0.08	0.28	
3,038.0	27.38	342.28	2,837.3	879.5	816.2	-327.7	1.60	0.56	3.28	
3,132.0	27.47	339.95	2,920.7	922.7	857.1	-341.7	1.15	0.10	-2.48	
3,228.0	27.20	337.62	3,006.0	966.8	898.2	-357.7	1.15	-0.28	-2.43	
3,322.0	26.89	335.20	3,089.7	1,009.5	937.4	-374.8	1.22	-0.33	-2.57	
3,417.0	27.55	336.92	3,174.2	1,052.9	977.1	-392.4	1.08	0.69	1.81	
3,512.0	28.26	336.92	3,258.1	1,097.4	1,018.0	-409.8	0.75	0.75	0.00	
3,607.0	27.82	334.68	3,342.0	1,142.0	1,058.7	-428.1	1.20	-0.46	-2.36	
3,702.0	27.55	333.45	3,426.1	1,186.0	1,098.4	-447.4	0.67	-0.28	-1.29	
3,739.0	27.42	333.01	3,458.9	1,203.1	1,113.7	-455.1	0.65	-0.35	-1.19	
Last PZD Surface Survey										
3,795.0	27.29	332.61	3,508.7	1,228.7	1,136.6	-466.9	0.40	-0.23	-0.71	
3,827.0	26.94	332.79	3,537.2	1,243.2	1,149.5	-473.5	1.12	-1.09	0.56	
3,921.0	27.01	337.50	3,621.0	1,285.8	1,188.2	-491.5	2.27	0.07	5.01	
4,016.0	26.07	340.52	3,705.9	1,328.2	1,227.8	-506.7	1.73	-0.99	3.18	
4,110.0	25.79	342.91	3,790.5	1,369.2	1,266.8	-519.6	1.15	-0.30	2.54	
4,205.0	26.76	343.33	3,875.7	1,411.1	1,307.1	-531.8	1.04	1.02	0.44	
4,300.0	28.83	340.83	3,959.7	1,455.2	1,349.2	-545.4	2.50	2.18	-2.63	
4,395.0	29.49	342.19	4,042.7	1,501.4	1,393.1	-560.1	0.98	0.69	1.43	
4,490.0	28.26	338.67	4,125.9	1,547.2	1,436.3	-575.4	2.21	-1.29	-3.71	
4,584.0	28.17	339.20	4,208.7	1,591.7	1,477.8	-591.4	0.28	-0.10	0.56	
4,679.0	29.00	338.72	4,292.1	1,637.1	1,520.2	-607.7	0.91	0.87	-0.51	
4,774.0	26.41	336.57	4,376.2	1,681.3	1,561.0	-624.5	2.92	-2.73	-2.26	

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Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)
4,869.0	26.57	338.08	4,461.2	1,723.6	1,600.1	-640.8	0.73	0.17	1.59
4,964.0	25.75	336.43	4,546.5	1,765.5	1,638.8	-657.0	1.15	-0.86	-1.74
5,058.0	27.20	341.27	4,630.7	1,807.4	1,677.8	-672.1	2.76	1.54	5.15
5,153.0	27.25	338.81	4,715.1	1,850.8	1,718.7	-686.9	1.19	0.05	-2.59
5,248.0	27.60	341.36	4,799.5	1,894.5	1,759.8	-701.8	1.29	0.37	2.68
5,343.0	25.62	341.75	4,884.4	1,936.9	1,800.2	-715.3	2.09	-2.08	0.41
5,438.0	22.82	344.46	4,971.0	1,975.7	1,837.4	-726.6	3.17	-2.95	2.85
5,533.0	19.95	342.63	5,059.5	2,010.2	1,870.7	-736.4	3.10	-3.02	-1.93
5,628.0	17.80	342.54	5,149.4	2,040.8	1,900.0	-745.6	2.26	-2.26	-0.09
5,722.0	15.42	345.79	5,239.4	2,067.5	1,925.8	-753.0	2.72	-2.53	3.46
5,817.0	13.32	339.42	5,331.5	2,090.9	1,948.3	-760.0	2.76	-2.21	-6.71
5,912.0	10.94	339.73	5,424.3	2,110.9	1,967.0	-766.9	2.51	-2.51	0.33
6,007.0	8.96	340.96	5,517.9	2,127.3	1,982.5	-772.5	2.10	-2.08	1.29
6,102.0	7.95	351.24	5,611.9	2,141.0	1,995.9	-775.9	1.91	-1.06	10.82
6,197.0	7.25	358.76	5,706.0	2,153.0	2,008.4	-777.0	1.28	-0.74	7.92
6,291.0	6.72	354.76	5,799.3	2,163.8	2,019.8	-777.6	0.76	-0.56	-4.26
6,386.0	6.20	353.53	5,893.7	2,174.1	2,030.5	-778.7	0.57	-0.55	-1.29
6,412.8	5.55	354.61	5,920.4	2,176.7	2,033.2	-779.0	2.46	-2.43	4.04
32D-24-2-98 TGT									
6,481.0	3.91	358.98	5,988.4	2,182.0	2,038.8	-779.4	2.46	-2.40	6.40
6,576.0	2.20	352.47	6,083.2	2,186.8	2,043.8	-779.7	1.83	-1.80	-6.85
6,671.0	0.30	96.64	6,178.2	2,188.4	2,045.6	-779.6	2.41	-2.00	109.65
6,765.0	0.31	160.34	6,272.2	2,188.1	2,045.4	-779.3	0.34	0.01	67.77
6,860.0	0.26	203.67	6,367.2	2,187.7	2,044.9	-779.3	0.23	-0.05	45.61
6,955.0	0.70	221.47	6,462.2	2,187.3	2,044.3	-779.8	0.48	0.46	18.74
7,050.0	1.01	218.84	6,557.2	2,186.6	2,043.2	-780.7	0.33	0.33	-2.77
7,144.0	0.62	301.41	6,651.2	2,186.6	2,042.8	-781.6	1.19	-0.41	87.84

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7,239.0	0.97	274.69	6,746.2	2,187.4	2,043.2	-782.9	0.53	0.37	-28.13
7,334.0	1.41	257.60	6,841.2	2,188.0	2,043.0	-784.8	0.59	0.46	-17.99
7,428.0	0.22	104.18	6,935.1	2,188.0	2,042.7	-785.8	1.71	-1.27	-163.21
7,523.0	0.40	76.89	7,030.1	2,187.9	2,042.7	-785.3	0.24	0.19	-28.73
7,618.0	0.26	105.15	7,125.1	2,187.7	2,042.7	-784.8	0.22	-0.15	29.75
7,714.0	0.35	140.48	7,221.1	2,187.3	2,042.4	-784.4	0.21	0.09	36.80
7,808.0	0.66	158.28	7,315.1	2,186.5	2,041.7	-784.0	0.37	0.33	18.94
7,903.0	1.05	161.00	7,410.1	2,185.1	2,040.4	-783.5	0.41	0.41	2.86
7,998.0	1.45	166.07	7,505.1	2,183.0	2,038.4	-782.9	0.44	0.42	5.34
8,094.0	0.53	43.93	7,601.1	2,182.0	2,037.5	-782.3	1.86	-0.96	-127.23
8,189.0	0.40	296.84	7,696.1	2,182.4	2,038.0	-782.3	0.79	-0.14	-112.73
8,284.0	1.49	334.50	7,791.1	2,183.9	2,039.3	-783.1	1.26	1.15	39.64
8,379.0	1.58	307.65	7,886.0	2,186.3	2,041.2	-784.7	0.76	0.09	-28.26
8,474.0	1.67	274.25	7,981.0	2,188.0	2,042.1	-787.1	0.99	0.09	-35.16
8,569.0	0.97	288.53	8,076.0	2,189.2	2,042.4	-789.3	0.81	-0.74	15.03
8,663.0	1.32	350.58	8,170.0	2,190.7	2,043.8	-790.2	1.30	0.37	66.01
8,759.0	0.75	317.54	8,266.0	2,192.4	2,045.3	-790.8	0.84	-0.59	-34.42
8,853.0	0.79	272.58	8,359.9	2,193.2	2,045.8	-791.9	0.63	0.04	-47.83
8,948.0	1.01	300.73	8,454.9	2,194.2	2,046.3	-793.2	0.51	0.23	29.63
9,043.0	1.23	292.22	8,549.9	2,195.6	2,047.1	-794.9	0.29	0.23	-8.96
9,138.0	0.48	266.30	8,644.9	2,196.4	2,047.4	-796.2	0.87	-0.79	-27.28
9,233.0	0.97	191.68	8,739.9	2,195.9	2,046.6	-796.8	1.01	0.52	-78.55
9,328.0	1.63	177.84	8,834.9	2,193.9	2,044.5	-796.9	0.76	0.69	-14.57
9,423.0	2.46	161.62	8,929.8	2,190.6	2,041.2	-796.2	1.06	0.87	-17.07
9,517.0	2.46	164.08	9,023.7	2,186.6	2,037.3	-795.0	0.11	0.00	2.62
9,612.0	1.67	181.04	9,118.7	2,183.3	2,034.0	-794.5	1.04	-0.83	17.85
9,706.0	1.67	227.76	9,212.6	2,181.6	2,031.7	-795.5	1.41	0.00	49.70

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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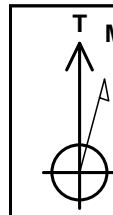
Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Build (°/100usft)	Turn (°/100usft)	
9,801.0	1.93	245.34	9,307.6	2,181.1	2,030.1	-798.0	0.64	0.27	18.51	
9,896.0	1.54	255.00	9,402.5	2,181.2	2,029.1	-800.7	0.51	-0.41	10.17	
9,991.0	1.44	256.98	9,497.5	2,181.5	2,028.5	-803.1	0.12	-0.11	2.08	
10,086.0	2.07	251.31	9,592.5	2,181.8	2,027.7	-805.9	0.69	0.66	-5.97	
10,181.0	1.98	249.86	9,687.4	2,182.0	2,026.6	-809.1	0.11	-0.09	-1.53	
10,213.0	1.76	249.86	9,719.4	2,182.0	2,026.2	-810.0	0.69	-0.69	0.00	
Last PZD Survey										
10,268.0	1.76	249.86	9,774.4	2,182.1	2,025.6	-811.6	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)		
3,739.0	3,458.9	1,113.7	-455.1	Last PZD Surface Survey	
10,213.0	9,719.4	2,026.2	-810.0	Last PZD Survey	
10,268.0	9,774.4	2,025.6	-811.6	Straightline Projection to TD	

Checked By: _____ Approved By: _____ Date: _____

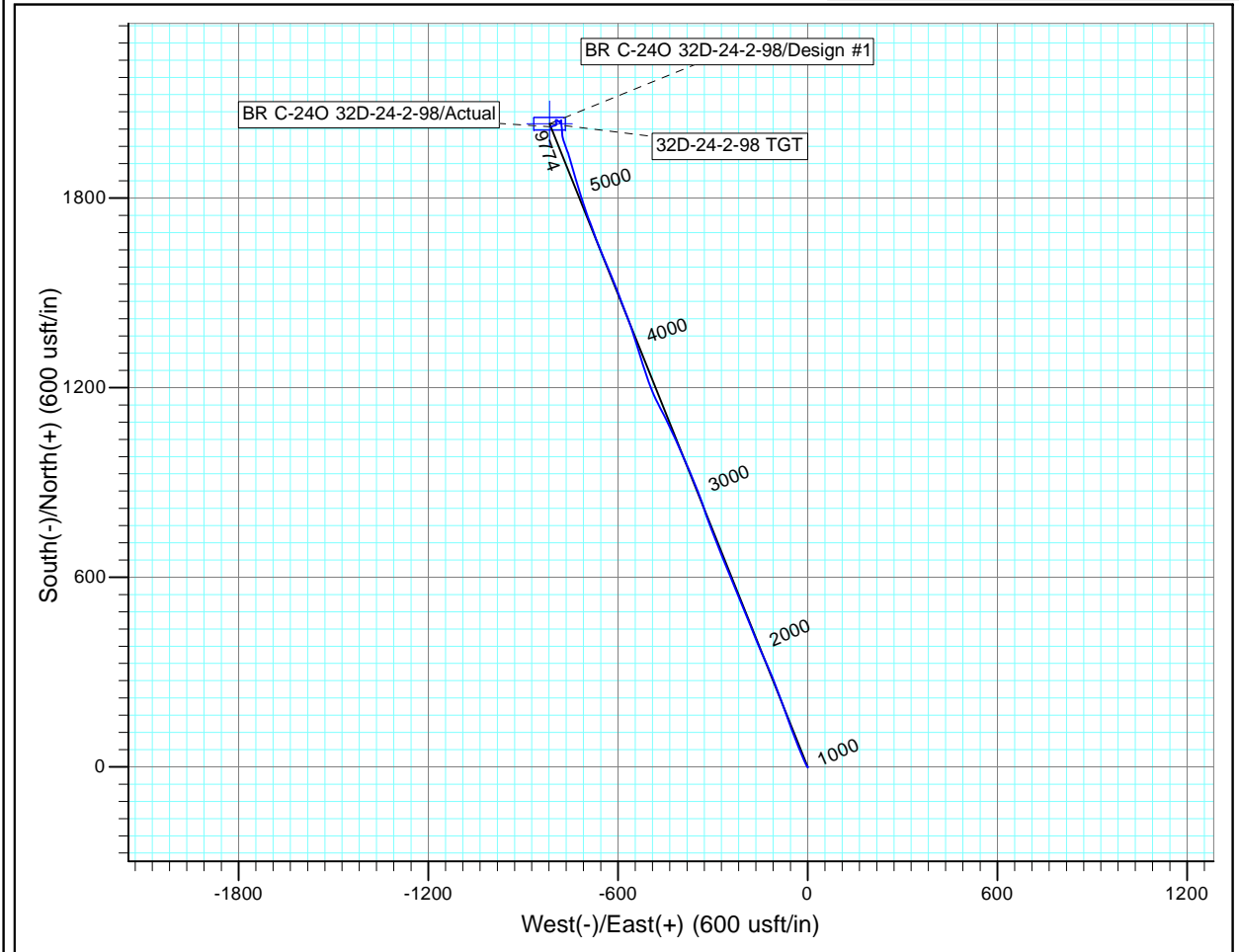
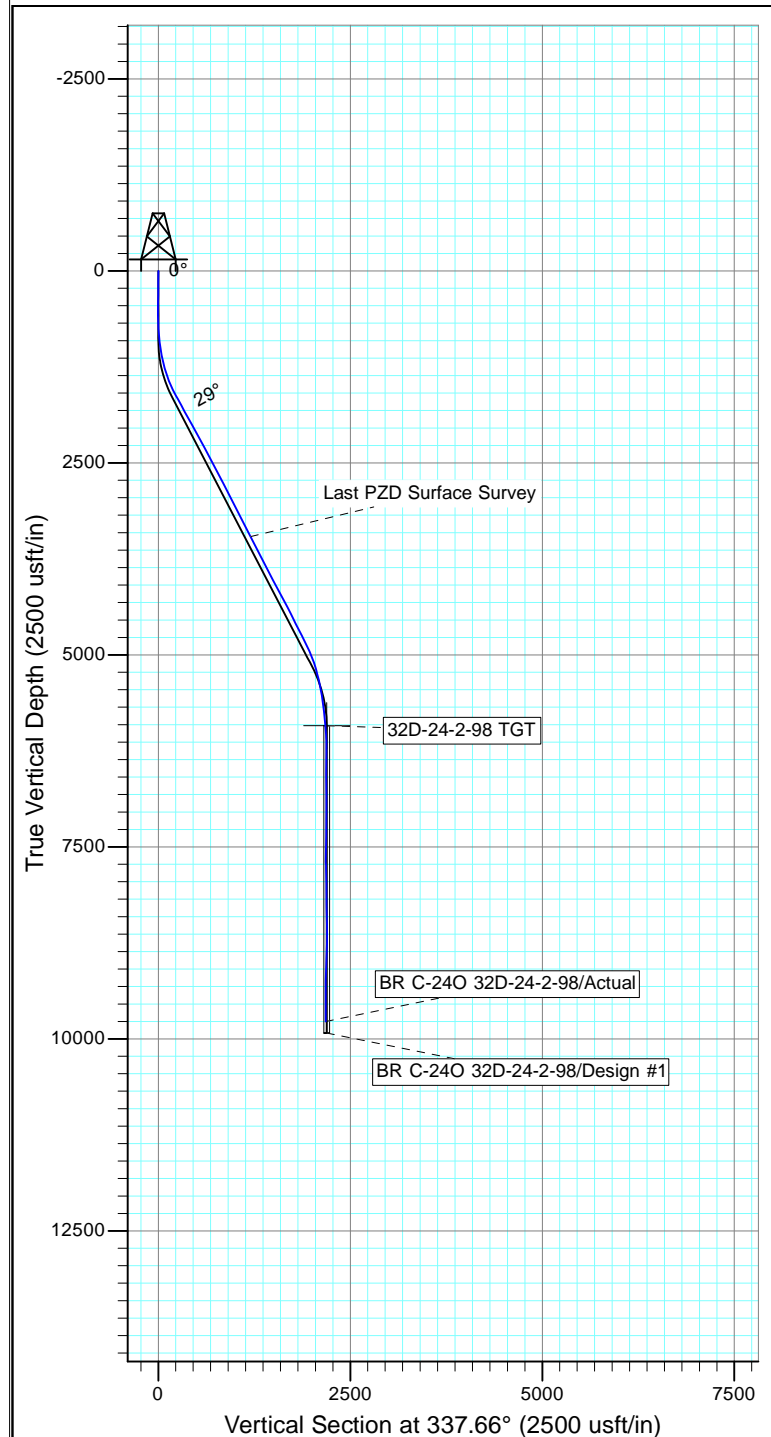


Project: Rio Blanco County, Colorado
Site: BR C-24O
Well: BR C-24O 32D-24-2-98
Wellbore: Wellbore #1
Design: Actual



Azimuths to True North
Magnetic North: 9.90°

Magnetic Field
Strength: 51677.2snT
Dip Angle: 65.82°
Date: 6/12/2017
Model: IGRF2015



Design: Actual (BR C-24O 32D-24-2-98/Wellbore #1)

Created By: Derek Stephens Date: 8:27, June 12 2017

THIS SURVEY IS CORRECT TO THE BEST OF
MY KNOWLEDGE AND IS SUPPORTED
BY ACTUAL FIELD DATA