

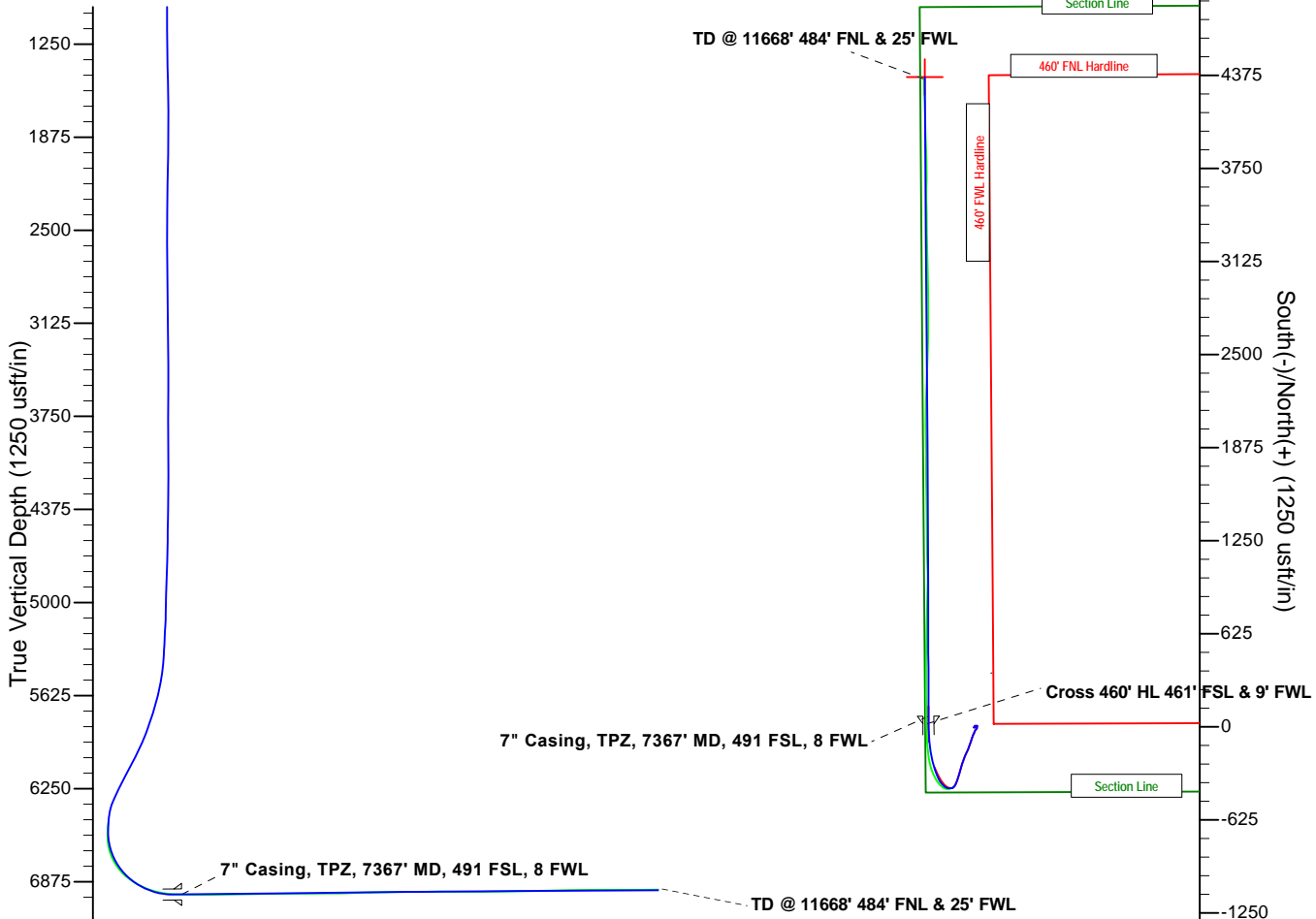
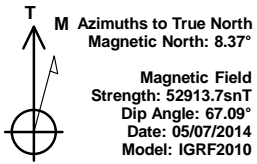


Project: Weld Co., CO
Site: Sec.34-T7N-R64W
Well: Bruegman South EG 34-021HN
Lat: 40° 31' 25.230 N
Long: 104° 32' 40.121 W

GL: 4848
KB: WELL @ 4866.2usft (Original Well Elev)



Precision
Directional Services





Great Western Oil & Gas

Weld Co., CO

Sec.34-T7N-R64W

Bruegman South EG 34-021HN

Survey Report - Geographic

10 December, 2014



Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Bruegman South EG 34-021HN
Project:	Weld Co., CO	TVD Reference:	WELL @ 4861.30usft (Original Well Elev)
Site:	Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.30usft (Original Well Elev)
Well:	Bruegman South EG 34-021HN	North Reference:	True
Wellbore:		Survey Calculation Method:	Minimum Curvature
Design:		Database:	EDM

Project	Weld Co., CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec.34-T7N-R64W					
Site Position:		Northing:	1,435,046.64	usft	Latitude:	40° 31' 25.230 N	
From:	Lat/Long	Easting:	3,265,632.14	usft	Longitude:	104° 32' 40.121 W	
Position Uncertainty:	0.00	usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.62 °

Well		Bruegman South EG 34-021HN				
Well Position	+N/-S	0.00 usft	Northing:	1,435,046.63 usft	Latitude:	40° 31' 25.230 N
	+E/-W	0.00 usft	Easting:	3,265,632.14 usft	Longitude:	104° 32' 40.121 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,844.80 usft

Wellbore					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	05/07/14	8.37	67.09	52,914

Design					
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	6,561.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	355.47	

Survey Program	Date	12/10/14			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
142.00	6,561.00	Precision MWD Survey OH	MWD	Std MWD	
6,593.00	11,668.00	MWD Survey	MWD	Std MWD	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,435,046.63	3,265,632.14	40° 31' 25.230 N	104° 32' 40.121 W
142.00	0.40	240.60	142.00	-0.24	-0.43	1,435,046.38	3,265,631.71	40° 31' 25.227 N	104° 32' 40.126 W
236.00	0.70	248.10	235.99	-0.62	-1.25	1,435,045.99	3,265,630.90	40° 31' 25.224 N	104° 32' 40.137 W
329.00	0.90	259.00	328.99	-0.97	-2.49	1,435,045.63	3,265,629.66	40° 31' 25.220 N	104° 32' 40.153 W
422.00	1.00	258.70	421.97	-1.27	-4.01	1,435,045.32	3,265,628.15	40° 31' 25.217 N	104° 32' 40.173 W
516.00	1.00	262.00	515.96	-1.54	-5.62	1,435,045.02	3,265,626.53	40° 31' 25.215 N	104° 32' 40.194 W
609.00	1.10	259.00	608.94	-1.83	-7.30	1,435,044.72	3,265,624.86	40° 31' 25.212 N	104° 32' 40.215 W
702.00	1.00	270.10	701.93	-2.00	-8.99	1,435,044.53	3,265,623.17	40° 31' 25.210 N	104° 32' 40.237 W
795.00	1.10	268.70	794.91	-2.01	-10.70	1,435,044.50	3,265,621.47	40° 31' 25.210 N	104° 32' 40.259 W
888.00	1.10	259.90	887.89	-2.19	-12.47	1,435,044.30	3,265,619.70	40° 31' 25.208 N	104° 32' 40.282 W
982.00	1.30	259.90	981.87	-2.54	-14.41	1,435,043.94	3,265,617.76	40° 31' 25.205 N	104° 32' 40.307 W

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Bruegman South EG 34-021HN
Project:	Weld Co., CO	TVD Reference:	WELL @ 4861.30usft (Original Well Elev)
Site:	Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.30usft (Original Well Elev)
Well:	Bruegman South EG 34-021HN	North Reference:	True
Wellbore:		Survey Calculation Method:	Minimum Curvature
Design:		Database:	EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,063.00	1.20	259.70	1,062.85	-2.85	-16.14	1,435,043.60	3,265,616.03	40° 31' 25.202 N	104° 32' 40.330 W
1,149.00	1.10	65.00	1,148.85	-2.66	-16.28	1,435,043.79	3,265,615.89	40° 31' 25.204 N	104° 32' 40.332 W
1,234.00	1.30	56.00	1,233.83	-1.78	-14.74	1,435,044.69	3,265,617.42	40° 31' 25.212 N	104° 32' 40.312 W
1,319.00	1.30	52.30	1,318.81	-0.65	-13.18	1,435,045.84	3,265,618.97	40° 31' 25.223 N	104° 32' 40.291 W
1,405.00	1.40	36.20	1,404.78	0.80	-11.79	1,435,047.30	3,265,620.34	40° 31' 25.238 N	104° 32' 40.273 W
1,490.00	1.40	29.30	1,489.76	2.54	-10.67	1,435,049.05	3,265,621.45	40° 31' 25.255 N	104° 32' 40.259 W
1,575.00	1.40	24.90	1,574.73	4.39	-9.72	1,435,050.91	3,265,622.37	40° 31' 25.273 N	104° 32' 40.247 W
1,661.00	1.90	21.70	1,660.70	6.66	-8.75	1,435,053.20	3,265,623.32	40° 31' 25.296 N	104° 32' 40.234 W
1,746.00	1.00	107.50	1,745.68	7.75	-7.52	1,435,054.30	3,265,624.53	40° 31' 25.306 N	104° 32' 40.218 W
1,831.00	0.70	138.60	1,830.67	7.14	-6.47	1,435,053.69	3,265,625.59	40° 31' 25.300 N	104° 32' 40.205 W
1,917.00	1.10	167.30	1,916.66	5.94	-5.94	1,435,052.50	3,265,626.13	40° 31' 25.289 N	104° 32' 40.198 W
2,002.00	1.20	175.00	2,001.64	4.26	-5.69	1,435,050.82	3,265,626.41	40° 31' 25.272 N	104° 32' 40.194 W
2,095.00	0.90	158.70	2,094.63	2.61	-5.34	1,435,049.17	3,265,626.78	40° 31' 25.256 N	104° 32' 40.190 W
2,188.00	0.70	145.10	2,187.62	1.46	-4.75	1,435,048.03	3,265,627.38	40° 31' 25.244 N	104° 32' 40.182 W
2,281.00	1.00	136.70	2,280.61	0.40	-3.87	1,435,046.99	3,265,628.27	40° 31' 25.234 N	104° 32' 40.171 W
2,375.00	0.80	131.10	2,374.59	-0.63	-2.81	1,435,045.97	3,265,629.34	40° 31' 25.224 N	104° 32' 40.157 W
2,468.00	0.60	136.50	2,467.59	-1.41	-1.98	1,435,045.20	3,265,630.17	40° 31' 25.216 N	104° 32' 40.146 W
2,562.00	0.60	47.40	2,561.58	-1.43	-1.28	1,435,045.18	3,265,630.87	40° 31' 25.216 N	104° 32' 40.137 W
2,655.00	0.40	55.30	2,654.58	-0.92	-0.66	1,435,045.70	3,265,631.49	40° 31' 25.221 N	104° 32' 40.129 W
2,748.00	0.50	32.30	2,747.58	-0.39	-0.17	1,435,046.24	3,265,631.97	40° 31' 25.226 N	104° 32' 40.123 W
2,842.00	0.60	12.80	2,841.57	0.44	0.15	1,435,047.07	3,265,632.29	40° 31' 25.234 N	104° 32' 40.119 W
2,935.00	0.70	17.50	2,934.57	1.46	0.43	1,435,048.09	3,265,632.56	40° 31' 25.244 N	104° 32' 40.115 W
3,028.00	0.90	347.30	3,027.56	2.71	0.44	1,435,049.34	3,265,632.56	40° 31' 25.257 N	104° 32' 40.115 W
3,122.00	0.70	8.20	3,121.55	4.00	0.36	1,435,050.63	3,265,632.46	40° 31' 25.269 N	104° 32' 40.116 W
3,215.00	0.60	7.70	3,214.54	5.04	0.51	1,435,051.68	3,265,632.60	40° 31' 25.280 N	104° 32' 40.114 W
3,309.00	0.50	351.30	3,308.54	5.94	0.51	1,435,052.57	3,265,632.59	40° 31' 25.289 N	104° 32' 40.114 W
3,402.00	0.40	16.60	3,401.54	6.65	0.54	1,435,053.28	3,265,632.61	40° 31' 25.296 N	104° 32' 40.114 W
3,487.00	0.40	129.30	3,486.54	6.75	0.86	1,435,053.38	3,265,632.93	40° 31' 25.296 N	104° 32' 40.110 W
3,572.00	0.30	101.70	3,571.53	6.51	1.31	1,435,053.15	3,265,633.38	40° 31' 25.294 N	104° 32' 40.104 W
3,658.00	0.40	147.20	3,657.53	6.21	1.69	1,435,052.86	3,265,633.76	40° 31' 25.291 N	104° 32' 40.099 W
3,743.00	0.40	74.60	3,742.53	6.04	2.14	1,435,052.69	3,265,634.21	40° 31' 25.290 N	104° 32' 40.093 W
3,828.00	0.40	53.90	3,827.53	6.30	2.66	1,435,052.95	3,265,634.74	40° 31' 25.292 N	104° 32' 40.086 W
3,914.00	0.50	58.70	3,913.53	6.67	3.23	1,435,053.33	3,265,635.29	40° 31' 25.296 N	104° 32' 40.079 W
4,003.00	0.50	71.70	4,002.52	6.99	3.93	1,435,053.66	3,265,635.99	40° 31' 25.299 N	104° 32' 40.070 W
4,088.00	0.70	68.30	4,087.52	7.30	4.76	1,435,053.98	3,265,636.82	40° 31' 25.302 N	104° 32' 40.059 W
4,174.00	0.70	70.30	4,173.51	7.67	5.74	1,435,054.36	3,265,637.80	40° 31' 25.306 N	104° 32' 40.046 W
4,259.00	0.90	154.50	4,258.51	7.25	6.52	1,435,053.94	3,265,638.58	40° 31' 25.301 N	104° 32' 40.036 W
4,344.00	0.70	164.80	4,343.50	6.14	6.94	1,435,052.84	3,265,639.02	40° 31' 25.291 N	104° 32' 40.031 W
4,429.00	0.70	158.70	4,428.49	5.16	7.27	1,435,051.86	3,265,639.35	40° 31' 25.281 N	104° 32' 40.027 W
4,515.00	0.70	193.00	4,514.49	4.16	7.34	1,435,050.86	3,265,639.44	40° 31' 25.271 N	104° 32' 40.026 W
4,600.00	1.40	201.90	4,599.47	2.69	6.84	1,435,049.39	3,265,638.95	40° 31' 25.256 N	104° 32' 40.032 W
4,685.00	1.50	210.20	4,684.44	0.76	5.89	1,435,047.45	3,265,638.02	40° 31' 25.237 N	104° 32' 40.045 W
4,771.00	1.80	199.50	4,770.41	-1.48	4.87	1,435,045.19	3,265,637.03	40° 31' 25.215 N	104° 32' 40.058 W
4,856.00	2.00	181.20	4,855.36	-4.23	4.40	1,435,042.45	3,265,636.58	40° 31' 25.188 N	104° 32' 40.064 W
4,941.00	2.10	182.80	4,940.31	-7.26	4.29	1,435,039.41	3,265,636.51	40° 31' 25.158 N	104° 32' 40.065 W
5,026.00	0.50	217.20	5,025.28	-9.12	3.99	1,435,037.55	3,265,636.23	40° 31' 25.140 N	104° 32' 40.069 W
5,112.00	2.90	222.50	5,111.24	-11.02	2.29	1,435,035.63	3,265,634.55	40° 31' 25.121 N	104° 32' 40.091 W
5,197.00	4.40	216.30	5,196.06	-15.23	-1.09	1,435,031.38	3,265,631.21	40° 31' 25.079 N	104° 32' 40.135 W
5,282.00	3.80	215.10	5,280.85	-20.16	-4.64	1,435,026.41	3,265,627.72	40° 31' 25.031 N	104° 32' 40.181 W
5,367.00	4.80	208.40	5,365.61	-25.60	-7.95	1,435,020.94	3,265,624.46	40° 31' 24.977 N	104° 32' 40.224 W
5,453.00	6.40	201.70	5,451.19	-33.22	-11.44	1,435,013.29	3,265,621.06	40° 31' 24.902 N	104° 32' 40.269 W
5,495.00	9.40	201.20	5,492.79	-38.59	-13.54	1,435,007.89	3,265,619.01	40° 31' 24.848 N	104° 32' 40.296 W
5,538.00	12.50	205.60	5,535.00	-46.06	-16.82	1,435,000.39	3,265,615.81	40° 31' 24.775 N	104° 32' 40.339 W
5,580.00	13.80	204.20	5,575.90	-54.73	-20.84	1,434,991.67	3,265,611.89	40° 31' 24.689 N	104° 32' 40.391 W
5,623.00	14.50	201.00	5,617.60	-64.43	-24.87	1,434,981.93	3,265,607.96	40° 31' 24.593 N	104° 32' 40.443 W

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Bruegman South EG 34-021HN
Project:	Weld Co., CO	TVD Reference:	WELL @ 4861.30usft (Original Well Elev)
Site:	Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.30usft (Original Well Elev)
Well:	Bruegman South EG 34-021HN	North Reference:	True
Wellbore:		Survey Calculation Method:	Minimum Curvature
Design:		Database:	EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,666.00	15.90	198.20	5,659.09	-75.06	-28.64	1,434,971.27	3,265,604.31	40° 31' 24.488 N	104° 32' 40.492 W
5,708.00	17.50	197.90	5,699.32	-86.53	-32.38	1,434,959.75	3,265,600.70	40° 31' 24.375 N	104° 32' 40.540 W
5,751.00	18.80	197.70	5,740.18	-99.29	-36.47	1,434,946.95	3,265,596.74	40° 31' 24.249 N	104° 32' 40.593 W
5,794.00	19.60	197.90	5,780.79	-112.75	-40.80	1,434,933.44	3,265,592.56	40° 31' 24.116 N	104° 32' 40.649 W
5,836.00	21.00	198.60	5,820.18	-126.59	-45.36	1,434,919.56	3,265,588.14	40° 31' 23.979 N	104° 32' 40.708 W
5,879.00	22.50	202.10	5,860.12	-141.51	-50.92	1,434,904.57	3,265,582.75	40° 31' 23.831 N	104° 32' 40.780 W
5,921.00	24.30	205.30	5,898.66	-156.77	-57.63	1,434,889.24	3,265,576.20	40° 31' 23.681 N	104° 32' 40.867 W
5,964.00	25.70	205.30	5,937.63	-173.20	-65.40	1,434,872.73	3,265,568.61	40° 31' 23.518 N	104° 32' 40.968 W
6,007.00	27.10	202.30	5,976.15	-190.70	-73.10	1,434,855.15	3,265,561.10	40° 31' 23.345 N	104° 32' 41.067 W
6,049.00	29.50	200.70	6,013.13	-209.22	-80.39	1,434,836.55	3,265,554.01	40° 31' 23.162 N	104° 32' 41.162 W
6,135.00	29.80	197.50	6,087.87	-249.41	-94.30	1,434,796.21	3,265,540.53	40° 31' 22.765 N	104° 32' 41.342 W
6,220.00	29.00	195.80	6,161.93	-289.39	-106.26	1,434,756.11	3,265,529.00	40° 31' 22.370 N	104° 32' 41.497 W
6,305.00	28.30	196.80	6,236.52	-328.50	-117.70	1,434,716.88	3,265,517.99	40° 31' 21.984 N	104° 32' 41.645 W
6,391.00	27.00	200.70	6,312.70	-366.28	-130.49	1,434,678.96	3,265,505.61	40° 31' 21.610 N	104° 32' 41.811 W
6,433.00	23.00	205.60	6,350.76	-382.61	-137.41	1,434,662.56	3,265,498.86	40° 31' 21.449 N	104° 32' 41.900 W
6,476.00	17.40	214.20	6,391.11	-395.52	-144.66	1,434,649.57	3,265,491.75	40° 31' 21.321 N	104° 32' 41.994 W
6,519.00	13.10	226.50	6,432.60	-404.19	-151.81	1,434,640.82	3,265,484.69	40° 31' 21.236 N	104° 32' 42.087 W
6,561.00	10.80	246.60	6,473.70	-409.04	-158.88	1,434,635.90	3,265,477.68	40° 31' 21.188 N	104° 32' 42.178 W
6,593.00	14.10	249.90	6,504.95	-411.57	-165.30	1,434,633.30	3,265,471.29	40° 31' 21.163 N	104° 32' 42.261 W
6,636.00	19.80	253.90	6,546.06	-415.39	-177.22	1,434,629.35	3,265,459.41	40° 31' 21.125 N	104° 32' 42.416 W
6,679.00	21.40	271.20	6,586.35	-417.25	-192.08	1,434,627.33	3,265,444.57	40° 31' 21.107 N	104° 32' 42.608 W
6,721.00	22.20	289.10	6,625.39	-414.49	-207.25	1,434,629.93	3,265,429.37	40° 31' 21.134 N	104° 32' 42.805 W
6,764.00	24.40	304.00	6,664.92	-406.85	-222.31	1,434,637.40	3,265,414.23	40° 31' 21.209 N	104° 32' 43.000 W
6,806.00	28.50	313.50	6,702.53	-395.10	-236.78	1,434,649.00	3,265,399.63	40° 31' 21.326 N	104° 32' 43.187 W
6,849.00	33.30	320.90	6,739.43	-378.86	-251.68	1,434,665.08	3,265,384.56	40° 31' 21.486 N	104° 32' 43.380 W
6,892.00	38.60	327.60	6,774.24	-358.35	-266.33	1,434,685.43	3,265,369.69	40° 31' 21.689 N	104° 32' 43.570 W
6,934.00	44.10	333.20	6,805.77	-334.22	-279.95	1,434,709.41	3,265,355.81	40° 31' 21.927 N	104° 32' 43.746 W
6,977.00	50.10	337.60	6,835.03	-305.58	-293.00	1,434,737.91	3,265,342.45	40° 31' 22.210 N	104° 32' 43.915 W
7,020.00	54.90	343.10	6,861.21	-273.46	-304.41	1,434,769.90	3,265,330.69	40° 31' 22.528 N	104° 32' 44.063 W
7,062.00	58.70	348.30	6,884.22	-239.43	-313.05	1,434,803.84	3,265,321.69	40° 31' 22.864 N	104° 32' 44.175 W
7,105.00	63.60	351.80	6,904.96	-202.34	-319.53	1,434,840.85	3,265,314.81	40° 31' 23.230 N	104° 32' 44.259 W
7,148.00	68.90	353.80	6,922.28	-163.31	-324.45	1,434,879.83	3,265,309.47	40° 31' 23.616 N	104° 32' 44.322 W
7,190.00	74.00	355.50	6,935.64	-123.68	-328.15	1,434,919.42	3,265,305.34	40° 31' 24.008 N	104° 32' 44.370 W
7,233.00	77.70	356.90	6,946.15	-82.08	-330.91	1,434,960.98	3,265,302.14	40° 31' 24.419 N	104° 32' 44.406 W
7,276.00	81.30	358.00	6,953.98	-39.85	-332.79	1,435,003.19	3,265,299.80	40° 31' 24.836 N	104° 32' 44.430 W
7,318.00	86.40	358.50	6,958.48	1.87	-334.06	1,435,044.90	3,265,298.08	40° 31' 25.248 N	104° 32' 44.447 W
7,324.00	87.60	358.90	6,958.79	7.86	-334.20	1,435,050.89	3,265,297.88	40° 31' 25.308 N	104° 32' 44.448 W
7,336.00	87.70	358.93	6,959.29	19.85	-334.42	1,435,062.87	3,265,297.52	40° 31' 25.426 N	104° 32' 44.451 W
Cross 460' HL 461' FSL & 9' FWL									
7,440.00	88.60	359.20	6,962.64	123.78	-336.12	1,435,166.78	3,265,294.71	40° 31' 26.453 N	104° 32' 44.473 W
7,525.00	90.40	359.90	6,963.38	208.77	-336.79	1,435,251.76	3,265,293.13	40° 31' 27.293 N	104° 32' 44.482 W
7,611.00	91.10	0.80	6,962.26	294.76	-336.26	1,435,337.75	3,265,292.72	40° 31' 28.143 N	104° 32' 44.475 W
7,696.00	90.90	0.10	6,960.77	379.74	-335.59	1,435,422.73	3,265,292.48	40° 31' 28.982 N	104° 32' 44.467 W
7,781.00	90.90	359.40	6,959.44	464.73	-335.96	1,435,507.71	3,265,291.19	40° 31' 29.822 N	104° 32' 44.471 W
7,867.00	90.90	0.60	6,958.09	550.72	-335.96	1,435,593.69	3,265,290.26	40° 31' 30.672 N	104° 32' 44.471 W
7,952.00	91.20	1.70	6,956.53	635.69	-334.26	1,435,678.67	3,265,291.05	40° 31' 31.512 N	104° 32' 44.449 W
8,037.00	90.50	1.20	6,955.27	720.65	-332.11	1,435,763.66	3,265,292.29	40° 31' 32.351 N	104° 32' 44.422 W
8,123.00	90.30	2.00	6,954.67	806.61	-329.71	1,435,849.64	3,265,293.76	40° 31' 33.201 N	104° 32' 44.390 W
8,208.00	90.00	1.70	6,954.44	891.57	-326.96	1,435,934.62	3,265,295.59	40° 31' 34.040 N	104° 32' 44.355 W
8,293.00	90.70	0.30	6,953.93	976.55	-325.48	1,436,019.61	3,265,296.16	40° 31' 34.880 N	104° 32' 44.336 W
8,378.00	89.70	358.50	6,953.63	1,061.54	-326.37	1,436,104.59	3,265,294.35	40° 31' 35.720 N	104° 32' 44.347 W
8,464.00	91.30	358.20	6,952.88	1,147.50	-328.85	1,436,190.52	3,265,290.95	40° 31' 36.569 N	104° 32' 44.379 W
8,549.00	91.80	358.90	6,950.58	1,232.44	-331.00	1,436,275.43	3,265,287.89	40° 31' 37.408 N	104° 32' 44.407 W
8,634.00	91.50	359.20	6,948.13	1,317.39	-332.40	1,436,360.36	3,265,285.56	40° 31' 38.248 N	104° 32' 44.426 W
8,720.00	91.60	359.90	6,945.80	1,403.36	-333.08	1,436,446.31	3,265,283.96	40° 31' 39.097 N	104° 32' 44.434 W

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Bruegman South EG 34-021HN
Project:	Weld Co., CO	TVD Reference:	WELL @ 4861.30usft (Original Well Elev)
Site:	Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.30usft (Original Well Elev)
Well:	Bruegman South EG 34-021HN	North Reference:	True
Wellbore:		Survey Calculation Method:	Minimum Curvature
Design:		Database:	EDM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,805.00	90.20	359.60	6,944.47	1,488.35	-333.45	1,436,531.29	3,265,282.67	40° 31' 39.937 N	104° 32' 44.439 W
8,890.00	90.70	358.90	6,943.80	1,573.33	-334.56	1,436,616.26	3,265,280.65	40° 31' 40.777 N	104° 32' 44.454 W
8,975.00	90.60	0.10	6,942.84	1,658.32	-335.30	1,436,701.24	3,265,278.99	40° 31' 41.617 N	104° 32' 44.463 W
9,061.00	90.70	359.80	6,941.86	1,744.32	-335.38	1,436,787.23	3,265,277.99	40° 31' 42.467 N	104° 32' 44.464 W
9,146.00	90.30	359.40	6,941.12	1,829.31	-335.97	1,436,872.21	3,265,276.48	40° 31' 43.307 N	104° 32' 44.472 W
9,231.00	89.40	358.70	6,941.34	1,914.30	-337.38	1,436,957.18	3,265,274.15	40° 31' 44.146 N	104° 32' 44.490 W
9,316.00	90.20	0.10	6,941.64	1,999.29	-338.27	1,437,042.16	3,265,272.35	40° 31' 44.986 N	104° 32' 44.502 W
9,402.00	89.50	359.40	6,941.86	2,085.29	-338.65	1,437,128.15	3,265,271.04	40° 31' 45.836 N	104° 32' 44.506 W
9,487.00	89.90	1.00	6,942.31	2,170.28	-338.35	1,437,213.14	3,265,270.43	40° 31' 46.676 N	104° 32' 44.503 W
9,572.00	91.50	2.90	6,941.27	2,255.22	-335.46	1,437,298.10	3,265,272.40	40° 31' 47.515 N	104° 32' 44.465 W
9,657.00	91.60	2.60	6,938.97	2,340.09	-331.38	1,437,383.01	3,265,275.56	40° 31' 48.354 N	104° 32' 44.412 W
9,743.00	91.60	2.00	6,936.57	2,425.99	-327.93	1,437,468.94	3,265,278.09	40° 31' 49.203 N	104° 32' 44.368 W
9,828.00	91.10	1.50	6,934.57	2,510.93	-325.34	1,437,553.90	3,265,279.77	40° 31' 50.042 N	104° 32' 44.334 W
9,913.00	91.10	1.00	6,932.94	2,595.89	-323.48	1,437,638.88	3,265,280.71	40° 31' 50.882 N	104° 32' 44.310 W
9,998.00	90.70	0.50	6,931.60	2,680.87	-322.37	1,437,723.87	3,265,280.90	40° 31' 51.722 N	104° 32' 44.296 W
10,084.00	90.70	359.80	6,930.55	2,766.86	-322.15	1,437,809.86	3,265,280.20	40° 31' 52.571 N	104° 32' 44.293 W
10,169.00	90.90	0.10	6,929.36	2,851.86	-322.22	1,437,894.85	3,265,279.21	40° 31' 53.411 N	104° 32' 44.294 W
10,254.00	90.40	359.40	6,928.40	2,936.85	-322.59	1,437,979.83	3,265,277.92	40° 31' 54.251 N	104° 32' 44.299 W
10,340.00	90.10	358.40	6,928.02	3,022.83	-324.24	1,438,065.79	3,265,275.35	40° 31' 55.101 N	104° 32' 44.320 W
10,425.00	90.30	357.60	6,927.73	3,107.78	-327.21	1,438,150.70	3,265,271.46	40° 31' 55.940 N	104° 32' 44.359 W
10,510.00	90.00	359.10	6,927.51	3,192.74	-329.66	1,438,235.63	3,265,268.10	40° 31' 56.780 N	104° 32' 44.390 W
10,596.00	90.00	359.10	6,927.51	3,278.73	-331.01	1,438,321.60	3,265,265.82	40° 31' 57.629 N	104° 32' 44.408 W
10,681.00	90.60	358.90	6,927.06	3,363.72	-332.49	1,438,406.56	3,265,263.43	40° 31' 58.469 N	104° 32' 44.427 W
10,766.00	90.00	0.10	6,926.62	3,448.71	-333.23	1,438,491.54	3,265,261.77	40° 31' 59.309 N	104° 32' 44.437 W
10,851.00	89.80	359.20	6,926.76	3,533.71	-333.75	1,438,576.53	3,265,260.33	40° 32' 0.149 N	104° 32' 44.443 W
10,936.00	90.00	0.50	6,926.91	3,618.70	-333.97	1,438,661.52	3,265,259.19	40° 32' 0.989 N	104° 32' 44.446 W
11,022.00	90.50	0.10	6,926.54	3,704.70	-333.52	1,438,747.52	3,265,258.72	40° 32' 1.839 N	104° 32' 44.440 W
11,107.00	90.00	359.10	6,926.17	3,789.70	-334.12	1,438,832.50	3,265,257.21	40° 32' 2.679 N	104° 32' 44.448 W
11,192.00	89.50	358.40	6,926.54	3,874.68	-335.97	1,438,917.46	3,265,254.44	40° 32' 3.518 N	104° 32' 44.472 W
11,277.00	88.20	357.60	6,928.24	3,959.60	-338.94	1,439,002.35	3,265,250.56	40° 32' 4.358 N	104° 32' 44.511 W
11,363.00	87.10	358.90	6,931.77	4,045.49	-341.56	1,439,088.20	3,265,247.01	40° 32' 5.206 N	104° 32' 44.545 W
11,448.00	89.50	358.20	6,934.29	4,130.42	-343.71	1,439,173.10	3,265,243.94	40° 32' 6.046 N	104° 32' 44.572 W
11,533.00	90.90	358.70	6,933.99	4,215.38	-346.01	1,439,258.04	3,265,240.73	40° 32' 6.885 N	104° 32' 44.602 W
11,601.00	90.00	357.60	6,933.46	4,283.34	-348.20	1,439,325.97	3,265,237.80	40° 32' 7.557 N	104° 32' 44.631 W
11,668.00	90.00	357.60	6,933.46	4,350.29	-351.01	1,439,392.88	3,265,234.28	40° 32' 8.218 N	104° 32' 44.667 W
Proj TD @ 11668' 484' FNL & 25' FWL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
021HN WP1	0.00	0.00	6,944.00	1,544.69	-324.41	1,436,587.73	3,265,291.11	40° 31' 40.494 N	104° 32' 44.322 W
- hit/miss target									
- Shape									
- actual wellpath misses target center by 9.66usft at 8861.23usft MD (6944.11 TVD, 1544.57 N, -334.07 E)									
- Point									

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Bruegman South EG 34-021HN
Project:	Weld Co., CO	TVD Reference:	WELL @ 4861.30usft (Original Well Elev)
Site:	Sec.34-T7N-R64W	MD Reference:	WELL @ 4861.30usft (Original Well Elev)
Well:	Bruegman South EG 34-021HN	North Reference:	True
Wellbore:		Survey Calculation Method:	Minimum Curvature
Design:		Database:	EDM

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,336.00	6,959.29	19.85	-334.42	Cross 460' HL 461' FSL & 9' FWL
11,668.00	6,933.46	4,350.29	-351.01	PTB @ 11668' 484' FNL & 25' FWL

Checked By: _____	Approved By: _____	Date: _____
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