



Terra Energy Partners, LLP

Rio Blanco County, CO

Sec 18, T2S, R97W

RG 443-7-297

Wellbore #1

Design: Wellbore #1

KLX Survey Report

29 June, 2021



Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RG 443-7-297
Project:	Rio Blanco County, CO	TVD Reference:	KB=30' @ 6650.90usft (H&P #329)
Site:	Sec 18, T2S, R97W	MD Reference:	KB=30' @ 6650.90usft (H&P #329)
Well:	RG 443-7-297	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Rio Blanco County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		Sec 18, T2S, R97W			
Site Position:		Northing:	1,758,376.00 usft	Latitude:	39.881773
From:	Map	Easting:	2,207,919.90 usft	Longitude:	-108.322723
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.78 °

Well		RG 443-7-297				
Well Position	+N/-S	0.00 usft	Northing:	1,758,400.60 usft	Latitude:	39.881840
	+E/-W	0.00 usft	Easting:	2,207,921.20 usft	Longitude:	-108.322722
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	6,620.90 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2021	6/22/2021	9.27	65.87	51,211.80000000

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	28.87	

Survey Program	Date	6/29/2021			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
133.00	1,332.00	Gyros (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro	
1,526.00	12,750.00	KLX MWD Surveys (Wellbore #1)	OWSG (REV5) MWD HDGM	OWSG MWD - Standard	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
First Gyro Survey @ 133.00'MD / 133.00' TVD									
133.00	0.09	9.23	133.00	0.10	0.02	0.10	0.07	0.07	0.00
227.00	1.32	59.41	226.99	0.73	0.96	1.10	1.34	1.31	53.38
321.00	3.61	59.77	320.90	2.77	4.45	4.57	2.44	2.44	0.38
415.00	4.75	47.55	414.65	6.89	9.88	10.80	1.53	1.21	-13.00
508.00	7.57	41.48	507.10	14.08	16.78	20.43	3.11	3.03	-6.53
602.00	11.44	33.57	599.80	26.49	26.04	35.77	4.34	4.12	-8.41
695.00	13.90	29.18	690.53	43.93	36.59	56.13	2.84	2.65	-4.72
789.00	16.63	28.04	781.20	65.66	48.42	80.88	2.92	2.90	-1.21

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Survey										
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862.00	20.66	29.28	850.36	86.12	59.63	104.21	5.55	5.52	1.70	
956.00	22.81	24.74	937.68	117.14	75.37	138.97	2.90	2.29	-4.83	
1,050.00	26.28	29.44	1,023.18	151.83	93.23	177.97	4.23	3.69	5.00	
1,143.00	26.47	29.78	1,106.50	187.74	113.64	219.28	0.26	0.20	0.37	
1,237.00	26.21	25.85	1,190.74	224.61	133.10	260.96	1.88	-0.28	-4.18	
Gyro Tie-in @ 1332.00' MD / 1276.01' TVD										
1,332.00	26.12	24.06	1,276.01	262.59	150.77	302.75	0.84	-0.09	-1.88	
1,526.00	23.47	18.76	1,452.13	338.18	180.62	383.36	1.78	-1.37	-2.73	
1,621.00	23.99	20.96	1,539.10	374.13	193.61	421.11	1.08	0.55	2.32	
1,715.00	25.14	27.11	1,624.61	409.76	209.55	460.01	2.98	1.22	6.54	
1,809.00	25.49	28.78	1,709.58	445.26	228.39	500.19	0.85	0.37	1.78	
1,904.00	25.75	28.96	1,795.24	481.23	248.22	541.27	0.29	0.27	0.19	
1,998.00	24.61	29.13	1,880.31	516.20	267.63	581.26	1.22	-1.21	0.18	
2,092.00	22.90	28.96	1,966.34	549.30	286.02	619.13	1.82	-1.82	-0.18	
100' Setback Crossed @ 2108.58' MD / 1981.61' TVD										
2,108.58	22.88	28.99	1,981.61	554.94	289.14	625.58	0.12	-0.10	0.18	
2,186.00	22.81	29.13	2,052.96	581.21	303.74	655.64	0.12	-0.10	0.18	
2,280.00	22.98	28.25	2,139.56	613.29	321.30	692.20	0.41	0.18	-0.94	
2,375.00	21.45	30.10	2,227.50	644.66	338.79	728.12	1.77	-1.61	1.95	
LL Crossed @ 2410.58' MD / 2260.63' TVD										
2,410.58	21.35	30.30	2,260.63	655.88	345.32	741.09	0.35	-0.29	0.56	
2,469.00	21.18	30.63	2,315.07	674.14	356.06	762.27	0.35	-0.29	0.57	
2,563.00	19.78	29.22	2,403.13	702.64	372.48	795.15	1.58	-1.49	-1.50	
2,657.00	17.53	26.23	2,492.19	729.22	386.50	825.20	2.60	-2.39	-3.18	
2,751.00	16.74	26.23	2,582.01	754.06	398.74	852.87	0.84	-0.84	0.00	
100' Setback Crossed @ 2761.57' MD / 2592.13' TVD										
2,761.57	16.84	26.37	2,592.13	756.80	400.09	855.92	1.06	0.99	1.37	
2,845.00	17.67	27.46	2,671.81	778.87	411.30	880.65	1.06	0.99	1.30	
2,939.00	19.91	29.48	2,760.79	805.46	425.76	910.92	2.48	2.38	2.15	
3,033.00	21.80	31.24	2,848.63	834.32	442.69	944.37	2.12	2.01	1.87	
3,127.00	21.93	31.68	2,935.87	864.18	460.96	979.34	0.22	0.14	0.47	
3,220.00	22.19	34.14	3,022.06	893.50	479.94	1,014.18	1.03	0.28	2.65	
3,315.00	20.43	32.65	3,110.56	922.31	498.95	1,048.59	1.94	-1.85	-1.57	
3,385.00	19.16	30.72	3,176.43	942.47	511.41	1,072.26	2.04	-1.81	-2.76	
3,522.00	14.95	27.99	3,307.38	977.42	531.20	1,112.42	3.13	-3.07	-1.99	
3,617.00	14.32	27.38	3,399.29	998.67	542.36	1,136.42	0.68	-0.66	-0.64	
3,711.00	14.41	33.00	3,490.36	1,018.81	554.07	1,159.71	1.49	0.10	5.98	
3,805.00	16.66	31.15	3,580.92	1,040.15	567.42	1,184.84	2.45	2.39	-1.97	
3,898.00	20.57	24.74	3,669.05	1,066.41	581.16	1,214.47	4.74	4.20	-6.89	
3,993.00	21.97	25.79	3,757.57	1,097.57	595.87	1,248.86	1.53	1.47	1.11	
4,087.00	24.08	28.69	3,844.08	1,130.23	612.73	1,285.60	2.55	2.24	3.09	
4,181.00	26.63	32.65	3,929.03	1,164.80	633.31	1,325.81	3.26	2.71	4.21	
4,275.00	25.80	30.10	4,013.36	1,200.23	654.93	1,367.28	1.49	-0.88	-2.71	
4,369.00	25.05	29.05	4,098.26	1,235.33	674.86	1,407.64	0.93	-0.80	-1.12	

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Survey										
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4,464.00	26.45	30.01	4,183.82	1,271.23	695.20	1,448.90	1.54	1.47	1.01	
4,558.00	27.82	28.34	4,267.47	1,308.67	716.09	1,491.77	1.67	1.46	-1.78	
4,652.00	25.22	27.20	4,351.58	1,345.79	735.66	1,533.73	2.82	-2.77	-1.21	
4,746.00	25.66	27.20	4,436.46	1,381.71	754.12	1,574.09	0.47	0.47	0.00	
4,840.00	25.27	27.38	4,521.33	1,417.63	772.65	1,614.49	0.42	-0.41	0.19	
4,935.00	26.32	29.22	4,606.86	1,454.01	792.25	1,655.82	1.39	1.11	1.94	
5,029.00	26.10	29.13	4,691.20	1,490.26	812.49	1,697.34	0.24	-0.23	-0.10	
5,124.00	25.58	30.01	4,776.70	1,526.28	832.92	1,738.74	0.68	-0.55	0.93	
5,218.00	24.13	29.40	4,861.99	1,560.59	852.50	1,778.25	1.57	-1.54	-0.65	
5,311.00	24.08	30.10	4,946.88	1,593.57	871.35	1,816.22	0.31	-0.05	0.75	
5,406.00	23.07	30.28	5,033.95	1,626.41	890.46	1,854.21	1.07	-1.06	0.19	
5,500.00	24.79	29.75	5,119.87	1,659.43	909.52	1,892.33	1.84	1.83	-0.56	
5,594.00	23.47	29.57	5,205.65	1,692.82	928.54	1,930.75	1.41	-1.40	-0.19	
5,689.00	23.95	25.79	5,292.64	1,726.63	946.27	1,968.92	1.68	0.51	-3.98	
5,783.00	23.73	27.73	5,378.62	1,760.56	963.37	2,006.89	0.87	-0.23	2.06	
5,877.00	23.69	28.78	5,464.68	1,793.85	981.26	2,044.68	0.45	-0.04	1.12	
5,972.00	24.04	28.87	5,551.56	1,827.52	999.79	2,083.12	0.37	0.37	0.09	
6,066.00	19.78	27.29	5,638.75	1,858.44	1,016.34	2,118.18	4.57	-4.53	-1.68	
6,161.00	19.29	26.41	5,728.28	1,886.78	1,030.69	2,149.92	0.60	-0.52	-0.93	
6,255.00	19.03	22.98	5,817.08	1,914.79	1,043.58	2,180.68	1.23	-0.28	-3.65	
6,349.00	20.00	27.73	5,905.69	1,943.13	1,057.04	2,212.00	1.98	1.03	5.05	
6,443.00	22.59	29.84	5,993.26	1,973.03	1,073.51	2,246.13	2.87	2.76	2.24	
6,538.00	24.61	29.92	6,080.31	2,006.00	1,092.45	2,284.16	2.13	2.13	0.08	
6,632.00	24.21	30.28	6,165.91	2,039.61	1,111.93	2,322.99	0.45	-0.43	0.38	
6,726.00	23.20	30.63	6,251.98	2,072.19	1,131.09	2,360.77	1.08	-1.07	0.37	
6,820.00	24.17	33.35	6,338.06	2,104.20	1,151.10	2,398.46	1.55	1.03	2.89	
6,915.00	24.52	34.58	6,424.61	2,136.67	1,172.98	2,437.47	0.65	0.37	1.29	
7,009.00	24.74	34.32	6,510.06	2,168.98	1,195.14	2,476.46	0.26	0.23	-0.28	
7,103.00	23.51	33.62	6,595.85	2,200.84	1,216.61	2,514.72	1.34	-1.31	-0.74	
7,197.00	22.10	32.74	6,682.50	2,231.33	1,236.56	2,551.05	1.54	-1.50	-0.94	
7,292.00	21.71	31.59	6,770.64	2,261.33	1,255.43	2,586.43	0.61	-0.41	-1.21	
7,386.00	20.65	28.87	6,858.29	2,290.65	1,272.54	2,620.38	1.54	-1.13	-2.89	
7,480.00	20.79	22.28	6,946.22	2,320.61	1,286.87	2,653.53	2.48	0.15	-7.01	
7,574.00	20.74	22.37	7,034.12	2,351.44	1,299.53	2,686.64	0.06	-0.05	0.10	
7,668.00	21.27	19.90	7,121.87	2,382.86	1,311.67	2,720.02	1.10	0.56	-2.63	
7,762.00	20.48	19.90	7,209.70	2,414.35	1,323.07	2,753.10	0.84	-0.84	0.00	
7,856.00	20.35	19.90	7,297.80	2,445.19	1,334.23	2,785.49	0.14	-0.14	0.00	
7,950.00	18.81	23.60	7,386.36	2,474.44	1,345.86	2,816.73	2.10	-1.64	3.94	
8,045.00	16.52	22.45	7,476.88	2,500.96	1,357.15	2,845.40	2.44	-2.41	-1.21	
8,139.00	16.17	26.23	7,567.08	2,525.06	1,368.04	2,871.76	1.19	-0.37	4.02	
8,233.00	16.13	26.32	7,657.37	2,548.50	1,379.61	2,897.88	0.05	-0.04	0.10	
8,327.00	16.04	26.94	7,747.69	2,571.78	1,391.29	2,923.90	0.21	-0.10	0.66	
8,421.00	15.78	26.06	7,838.09	2,594.84	1,402.79	2,949.65	0.38	-0.28	-0.94	

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8,515.00	14.59	27.90	7,928.81	2,616.79	1,413.94	2,974.25	1.37	-1.27	1.96	
8,609.00	12.39	28.69	8,020.21	2,636.10	1,424.32	2,996.18	2.35	-2.34	0.84	
8,704.00	11.69	28.25	8,113.12	2,653.52	1,433.77	3,015.99	0.74	-0.74	-0.46	
8,798.00	9.93	27.64	8,205.45	2,669.09	1,442.04	3,033.62	1.88	-1.87	-0.65	
8,893.00	8.75	26.50	8,299.19	2,682.81	1,449.06	3,049.03	1.26	-1.24	-1.20	
8,986.00	7.47	24.83	8,391.25	2,694.63	1,454.76	3,062.13	1.40	-1.38	-1.80	
9,080.00	6.28	23.77	8,484.58	2,704.88	1,459.40	3,073.34	1.27	-1.27	-1.13	
9,175.00	5.80	23.16	8,579.05	2,714.05	1,463.38	3,083.30	0.51	-0.51	-0.64	
9,269.00	5.27	20.78	8,672.61	2,722.45	1,466.78	3,092.30	0.61	-0.56	-2.53	
9,363.00	4.53	18.50	8,766.27	2,730.01	1,469.49	3,100.22	0.81	-0.79	-2.43	
9,458.00	3.74	17.88	8,861.02	2,736.52	1,471.63	3,106.95	0.83	-0.83	-0.65	
9,552.00	3.78	16.92	8,954.82	2,742.40	1,473.47	3,112.99	0.08	0.04	-1.02	
9,646.00	3.03	17.97	9,048.65	2,747.73	1,475.14	3,118.47	0.80	-0.80	1.12	
9,740.00	2.29	12.70	9,142.55	2,751.92	1,476.32	3,122.71	0.83	-0.79	-5.61	
9,833.00	1.45	357.32	9,235.50	2,754.91	1,476.67	3,125.50	1.04	-0.90	-16.54	
9,928.00	1.23	322.42	9,330.47	2,756.92	1,476.00	3,126.93	0.87	-0.23	-36.74	
10,022.00	1.10	299.75	9,424.45	2,758.17	1,474.60	3,127.34	0.51	-0.14	-24.12	
10,116.00	1.10	279.27	9,518.44	2,758.76	1,472.92	3,127.06	0.42	0.00	-21.79	
10,210.00	1.85	261.78	9,612.41	2,758.69	1,470.53	3,125.84	0.92	0.80	-18.61	
10,303.00	2.33	254.31	9,705.34	2,757.96	1,467.23	3,123.61	0.59	0.52	-8.03	
10,397.00	2.77	258.79	9,799.25	2,757.00	1,463.16	3,120.80	0.51	0.47	4.77	
10,491.00	3.56	247.19	9,893.11	2,755.43	1,458.24	3,117.05	1.08	0.84	-12.34	
10,585.00	3.47	235.24	9,986.93	2,752.68	1,453.21	3,112.21	0.78	-0.10	-12.71	
10,680.00	3.78	233.57	10,081.74	2,749.18	1,448.33	3,106.79	0.34	0.33	-1.76	
10,774.00	4.57	231.55	10,175.49	2,745.01	1,442.91	3,100.52	0.85	0.84	-2.15	
10,867.00	4.97	227.15	10,268.17	2,739.97	1,437.05	3,093.28	0.58	0.43	-4.73	
10,961.00	5.71	226.01	10,361.76	2,733.95	1,430.70	3,084.94	0.80	0.79	-1.21	
11,055.00	5.89	226.18	10,455.28	2,727.36	1,423.86	3,075.87	0.19	0.19	0.18	
11,149.00	6.28	223.46	10,548.75	2,720.29	1,416.84	3,066.29	0.52	0.41	-2.89	
11,243.00	6.50	220.12	10,642.17	2,712.49	1,409.87	3,056.10	0.46	0.23	-3.55	
11,337.00	6.86	222.40	10,735.53	2,704.28	1,402.66	3,045.42	0.48	0.38	2.43	
11,431.00	6.50	229.79	10,828.89	2,696.69	1,394.81	3,034.99	0.99	-0.38	7.86	
11,526.00	6.68	233.57	10,923.26	2,689.94	1,386.26	3,024.95	0.49	0.19	3.98	
11,620.00	6.81	234.71	11,016.61	2,683.48	1,377.31	3,014.97	0.20	0.14	1.21	
11,715.00	7.38	239.02	11,110.89	2,677.08	1,367.48	3,004.62	0.82	0.60	4.54	
11,809.00	7.69	242.27	11,204.08	2,671.05	1,356.74	2,994.15	0.56	0.33	3.46	
11,904.00	8.44	242.62	11,298.14	2,664.88	1,344.92	2,983.05	0.79	0.79	0.37	
11,997.00	8.92	244.20	11,390.07	2,658.61	1,332.37	2,971.49	0.58	0.52	1.70	
12,092.00	9.49	240.95	11,483.85	2,651.60	1,318.89	2,958.84	0.81	0.60	-3.42	
12,186.00	9.98	240.95	11,576.49	2,643.88	1,305.00	2,945.38	0.52	0.52	0.00	
12,280.00	10.59	240.60	11,668.98	2,635.68	1,290.35	2,931.13	0.65	0.65	-0.37	
12,374.00	11.25	242.27	11,761.28	2,627.18	1,274.71	2,916.13	0.78	0.70	1.78	
12,469.00	11.51	240.42	11,854.41	2,618.19	1,258.27	2,900.31	0.47	0.27	-1.95	

Company:	Terra Energy Partners, LLP	Local Co-ordinate Reference:	Well RG 443-7-297
Project:	Rio Blanco County, CO	TVD Reference:	KB=30' @ 6650.90usft (H&P #329)
Site:	Sec 18, T2S, R97W	MD Reference:	KB=30' @ 6650.90usft (H&P #329)
Well:	RG 443-7-297	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,563.00	11.07	238.93	11,946.59	2,608.90	1,242.38	2,884.51	0.56	-0.47	-1.59	
12,657.00	11.43	238.14	12,038.79	2,599.33	1,226.74	2,868.57	0.42	0.38	-0.84	
12,686.00	11.25	239.19	12,067.22	2,596.36	1,221.87	2,863.63	0.94	-0.62	3.62	
TD @ 12750.00' MD / 12129.99' TVD										
12,750.00	11.25	239.19	12,129.99	2,589.97	1,211.15	2,852.85	0.00	0.00	0.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
133.00	133.00	0.10	0.02	First Gyro Survey @ 133.00'MD / 133.00' TVD	
1,332.00	1,276.01	262.59	150.77	Gyro Tie-in @ 1332.00' MD / 1276.01' TVD	
2,108.58	1,981.61	554.94	289.14	100' Setback Crossed @ 2108.58' MD / 1981.61' TVD	
2,410.58	2,260.63	655.88	345.32	LL Crossed @ 2410.58' MD / 2260.63' TVD	
2,761.57	2,592.13	756.80	400.09	100' Setback Crossed @ 2761.57' MD / 2592.13' TVD	
12,750.00	12,129.99	2,589.97	1,211.15	TD @ 12750.00' MD / 12129.99' TVD	