QEP Energy (TX)

Andrews County, TX (NAD27 - Grid)
UL 1933 Pad
UL 1933 E10 05SC

Original Hole

Design: FINAL

Standard Survey Report

28 December, 2020

Company:	QEP Energy (TX)	**Local Co-ordinate Reference:**	Well UL 1933 E10 05SC
Project:	Andrews County, TX (NAD27 - Grid)	**TVD Reference:**	KB @ 2983.0usft (Unit 413)
Site:	UL 1933 Pad	**MD Reference:**	KB @ 2983.0usft (Unit 413)
Well:	UL 1933 E10 05SC	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	EDM 5000.15 Single User Db

Project Andrews County, TX (NAD27 - Grid)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Texas North Central 4202		

Site UL 1933 Pad

Site Position:		**Northing:**	265,736.71 usft	**Latitude:**	32.306929
From:	Map	**Easting:**	541,045.09 usft	**Longitude:**	-102.223553
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-2.58 °

Well UL 1933 E10 05SC

Well Position	**+N/-S**	0.0 usft	**Northing:**	296,603.33 usft	**Latitude:**	32.391585
	+E/-W	0.0 usft	**Easting:**	540,193.76 usft	**Longitude:**	-102.230802
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	2,962.0 usft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM2020_FILE	11/15/2020	6.02	60.07	47,613.40000000

Design FINAL

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	166.37

Survey Program **Date** 12/28/2020

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
130.0	21,200.0	Survey #1 (Original Hole)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
130.0	0.26	89.61	130.0	0.0	0.3	0.1	0.20	0.20	0.00
222.0	0.21	184.46	222.0	-0.2	0.5	0.3	0.38	-0.05	103.10
315.0	0.49	143.00	315.0	-0.7	0.7	0.8	0.39	0.30	-44.58
407.0	0.56	152.37	407.0	-1.4	1.2	1.6	0.12	0.08	10.18
499.0	0.55	98.08	499.0	-1.8	1.8	2.2	0.55	-0.01	-59.01
591.0	1.04	43.09	591.0	-1.3	2.8	1.9	0.93	0.53	-59.77
684.0	1.73	21.97	684.0	0.6	3.9	0.3	0.91	0.74	-22.71
776.0	2.67	21.85	775.9	3.9	5.2	-2.6	1.02	1.02	-0.13
868.0	3.03	25.99	867.8	8.1	7.1	-6.2	0.45	0.39	4.50

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Well:	UL 1933 E10 05SC	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	EDM 5000.15 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)
960.0	3.90	22.98	959.6	13.2	9.4	-10.6	0.97	0.95	-3.27
1,053.0	3.69	23.12	1,052.4	18.8	11.8	-15.5	0.23	-0.23	0.15
1,145.0	3.32	16.19	1,144.2	24.1	13.7	-20.2	0.61	-0.40	-7.53
1,237.0	2.80	15.62	1,236.1	28.8	15.0	-24.5	0.57	-0.57	-0.62
1,329.0	2.30	13.12	1,328.0	32.8	16.1	-28.1	0.56	-0.54	-2.72
1,421.0	2.30	6.66	1,419.9	36.4	16.7	-31.5	0.28	0.00	-7.02
1,515.0	2.32	5.03	1,513.9	40.2	17.1	-35.0	0.07	0.02	-1.73
1,609.0	2.27	18.39	1,607.8	43.8	17.8	-38.4	0.57	-0.05	14.21
1,704.0	2.54	33.01	1,702.7	47.4	19.6	-41.5	0.70	0.28	15.39
1,798.0	3.03	38.59	1,796.6	51.1	22.3	-44.4	0.60	0.52	5.94
1,824.0	2.93	39.80	1,822.6	52.1	23.1	-45.2	0.45	-0.38	4.65
1,967.0	2.61	37.39	1,965.4	57.5	27.4	-49.4	0.24	-0.22	-1.69
2,061.0	2.63	40.31	2,059.3	60.9	30.1	-52.1	0.14	0.02	3.11
2,156.0	2.72	42.11	2,154.2	64.2	33.1	-54.6	0.13	0.09	1.89
2,250.0	3.78	38.26	2,248.0	68.3	36.5	-57.8	1.15	1.13	-4.10
2,344.0	4.04	34.18	2,341.8	73.5	40.2	-61.9	0.40	0.28	-4.34
2,438.0	3.76	33.40	2,435.6	78.8	43.8	-66.2	0.30	-0.30	-0.83
2,533.0	3.66	32.04	2,530.4	84.0	47.1	-70.5	0.14	-0.11	-1.43
2,627.0	3.89	30.25	2,624.2	89.3	50.3	-74.9	0.27	0.24	-1.90
2,722.0	3.62	31.85	2,719.0	94.6	53.5	-79.3	0.30	-0.28	1.68
2,816.0	3.66	28.01	2,812.8	99.8	56.5	-83.6	0.26	0.04	-4.09
2,910.0	3.47	27.78	2,906.6	104.9	59.2	-88.0	0.20	-0.20	-0.24
3,004.0	3.28	25.13	3,000.5	109.9	61.7	-92.2	0.26	-0.20	-2.82
3,099.0	2.84	16.47	3,095.3	114.6	63.5	-96.4	0.67	-0.46	-9.12
3,193.0	2.63	24.11	3,189.2	118.8	65.1	-100.1	0.45	-0.22	8.13
3,287.0	2.85	36.53	3,283.1	122.6	67.3	-103.3	0.67	0.23	13.21
3,381.0	3.00	35.05	3,377.0	126.5	70.1	-106.4	0.18	0.16	-1.57
3,475.0	3.75	30.62	3,470.8	131.2	73.1	-110.3	0.84	0.80	-4.71
3,570.0	3.38	26.34	3,565.6	136.4	76.0	-114.6	0.48	-0.39	-4.51
3,665.0	2.78	32.69	3,660.5	140.8	78.4	-118.4	0.73	-0.63	6.68
3,759.0	3.00	37.05	3,754.4	144.7	81.2	-121.5	0.33	0.23	4.64
3,853.0	3.29	37.48	3,848.2	148.8	84.3	-124.8	0.31	0.31	0.46
3,948.0	2.92	35.12	3,943.1	152.9	87.3	-128.1	0.41	-0.39	-2.48
4,042.0	3.12	32.33	4,037.0	157.1	90.1	-131.4	0.26	0.21	-2.97
4,137.0	3.47	28.97	4,131.8	161.8	92.8	-135.3	0.42	0.37	-3.54
4,232.0	3.10	28.00	4,226.7	166.5	95.4	-139.4	0.39	-0.39	-1.02
4,326.0	3.26	26.77	4,320.5	171.2	97.8	-143.3	0.19	0.17	-1.31
4,420.0	3.97	32.95	4,414.3	176.3	100.8	-147.6	0.86	0.76	6.57
4,514.0	3.49	35.11	4,508.1	181.4	104.2	-151.7	0.53	-0.51	2.30
4,609.0	2.92	33.51	4,603.0	185.8	107.2	-155.3	0.61	-0.60	-1.68
4,704.0	2.34	25.93	4,697.9	189.5	109.4	-158.4	0.71	-0.61	-7.98
4,798.0	2.59	25.93	4,791.8	193.1	111.2	-161.5	0.27	0.27	0.00
4,893.0	2.97	27.20	4,886.7	197.3	113.2	-165.0	0.41	0.40	1.34
4,987.0	3.61	27.00	4,980.5	202.1	115.7	-169.1	0.68	0.68	-0.21

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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)
5,081.0	3.41	26.30	5,074.3	207.2	118.3	-173.5	0.22	-0.21	-0.74
5,176.0	3.14	28.41	5,169.2	212.0	120.8	-177.6	0.31	-0.28	2.22
5,270.0	3.63	30.01	5,263.0	216.9	123.5	-181.7	0.53	0.52	1.70
5,364.0	3.94	35.12	5,356.8	222.1	126.8	-186.0	0.49	0.33	5.44
5,459.0	3.83	39.13	5,451.6	227.2	130.7	-190.0	0.31	-0.12	4.22
5,553.0	3.84	36.27	5,545.4	232.2	134.6	-194.0	0.20	0.01	-3.04
5,648.0	3.95	35.49	5,640.2	237.4	138.3	-198.1	0.13	0.12	-0.82
5,742.0	3.75	35.31	5,734.0	242.6	142.0	-202.3	0.21	-0.21	-0.19
5,802.0	3.64	36.80	5,793.8	245.7	144.3	-204.8	0.24	-0.18	2.48
5,869.0	3.37	37.60	5,860.7	249.0	146.7	-207.4	0.41	-0.40	1.19
5,964.0	3.26	40.66	5,955.5	253.2	150.2	-210.7	0.22	-0.12	3.22
6,059.0	1.91	49.13	6,050.4	256.3	153.2	-213.0	1.47	-1.42	8.92
6,153.0	2.00	59.29	6,144.4	258.2	155.8	-214.2	0.38	0.10	10.81
6,248.0	1.67	52.52	6,239.3	259.9	158.3	-215.2	0.42	-0.35	-7.13
6,343.0	2.23	58.89	6,334.3	261.7	161.0	-216.4	0.63	0.59	6.71
6,438.0	1.15	48.40	6,429.2	263.2	163.3	-217.4	1.18	-1.14	-11.04
6,532.0	0.94	36.60	6,523.2	264.5	164.4	-218.3	0.32	-0.22	-12.55
6,626.0	1.06	37.09	6,617.2	265.8	165.4	-219.3	0.13	0.13	0.52
6,721.0	0.73	279.51	6,712.2	266.6	165.3	-220.1	1.62	-0.35	-123.77
6,815.0	1.32	280.14	6,806.2	266.9	163.7	-220.8	0.63	0.63	0.67
6,909.0	1.30	278.06	6,900.2	267.2	161.6	-221.6	0.05	-0.02	-2.21
7,004.0	0.95	274.97	6,995.2	267.5	159.7	-222.3	0.37	-0.37	-3.25
7,098.0	0.64	291.45	7,089.1	267.7	158.4	-222.8	0.41	-0.33	17.53
7,193.0	0.51	283.64	7,184.1	268.0	157.5	-223.3	0.16	-0.14	-8.22
7,287.0	0.84	279.87	7,278.1	268.2	156.5	-223.8	0.35	0.35	-4.01
7,382.0	0.57	288.18	7,373.1	268.5	155.3	-224.3	0.30	-0.28	8.75
7,476.0	0.07	300.01	7,467.1	268.7	154.8	-224.6	0.53	-0.53	12.59
7,570.0	0.95	67.95	7,561.1	269.0	155.5	-224.8	1.06	0.94	136.11
7,665.0	0.90	82.70	7,656.1	269.4	157.0	-224.8	0.26	-0.05	15.53
7,759.0	0.84	81.61	7,750.1	269.6	158.4	-224.7	0.07	-0.06	-1.16
7,854.0	0.77	99.92	7,845.1	269.6	159.7	-224.3	0.28	-0.07	19.27
7,948.0	0.70	116.48	7,939.1	269.2	160.8	-223.7	0.24	-0.07	17.62
8,043.0	0.77	163.01	8,034.1	268.3	161.5	-222.7	0.61	0.07	48.98
8,138.0	0.41	189.88	8,129.1	267.4	161.7	-221.8	0.47	-0.38	28.28
8,233.0	0.11	111.53	8,224.1	267.0	161.7	-221.4	0.42	-0.32	-82.47
8,327.0	0.12	120.23	8,318.1	266.9	161.9	-221.3	0.02	0.01	9.26
8,421.0	0.89	75.07	8,412.1	267.1	162.7	-221.2	0.86	0.82	-48.04
8,515.0	1.05	118.17	8,506.0	266.9	164.1	-220.7	0.77	0.17	45.85
8,610.0	1.32	120.61	8,601.0	265.9	165.8	-219.3	0.29	0.28	2.57
8,705.0	1.40	120.60	8,696.0	264.7	167.8	-217.8	0.08	0.08	-0.01
8,800.0	1.33	134.87	8,791.0	263.4	169.6	-216.0	0.36	-0.07	15.02
8,894.0	1.19	142.59	8,885.0	261.8	170.9	-214.2	0.23	-0.15	8.21
8,989.0	1.17	155.39	8,979.9	260.2	171.9	-212.3	0.28	-0.02	13.47

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9,084.0	9.65	155.54	9,074.4	252.0	175.6	-203.5	8.93	8.93	0.16
9,178.0	17.19	161.19	9,165.8	231.7	183.4	-181.9	8.13	8.02	6.01
9,258.4	21.85	162.84	9,241.6	206.1	191.6	-155.1	5.84	5.80	2.05
CROSS 100' N HL - 9258.4' MD									
9,273.0	22.70	163.07	9,255.1	200.8	193.3	-149.6	5.84	5.81	1.57
9,367.0	31.12	159.09	9,338.8	160.7	207.2	-107.3	9.16	8.96	-4.23
9,462.0	43.75	160.88	9,414.1	106.5	226.8	-50.1	13.34	13.29	1.88
9,556.0	57.05	167.12	9,473.9	37.0	246.4	22.1	15.03	14.15	6.64
9,650.0	74.24	167.24	9,512.5	-46.2	265.3	107.4	18.29	18.29	0.13
9,713.0	85.08	166.07	9,523.8	-106.4	279.6	169.3	17.30	17.21	-1.86
9,718.0	85.65	166.02	9,524.2	-111.2	280.8	174.3	11.44	11.40	-1.00
9,814.0	90.64	168.65	9,527.3	-204.8	301.8	270.2	5.87	5.20	2.74
9,909.0	91.40	168.63	9,525.6	-297.9	320.5	365.1	0.80	0.80	-0.02
10,003.0	90.97	168.76	9,523.7	-390.1	338.9	459.0	0.48	-0.46	0.14
10,099.0	89.27	171.45	9,523.5	-484.7	355.4	554.8	3.31	-1.77	2.80
10,193.0	89.58	173.64	9,524.4	-577.9	367.6	648.2	2.35	0.33	2.33
10,288.0	90.88	171.88	9,524.1	-672.1	379.6	742.6	2.30	1.37	-1.85
10,382.0	91.74	169.31	9,521.9	-764.8	395.0	836.3	2.88	0.91	-2.73
10,476.0	90.53	167.66	9,520.1	-856.9	413.7	930.2	2.18	-1.29	-1.76
10,570.0	89.83	167.32	9,519.8	-948.6	434.1	1,024.2	0.83	-0.74	-0.36
10,665.0	90.29	167.62	9,519.7	-1,041.4	454.7	1,119.2	0.58	0.48	0.32
10,759.0	90.06	167.84	9,519.4	-1,133.2	474.7	1,213.2	0.34	-0.24	0.23
10,853.0	91.09	168.39	9,518.4	-1,225.2	494.0	1,307.1	1.24	1.10	0.59
10,947.0	89.96	167.86	9,517.6	-1,317.2	513.4	1,401.1	1.33	-1.20	-0.56
11,041.0	91.40	168.12	9,516.5	-1,409.1	532.9	1,495.0	1.56	1.53	0.28
11,135.0	91.83	167.26	9,513.8	-1,500.9	553.0	1,589.0	1.02	0.46	-0.91
11,229.0	91.86	166.66	9,510.8	-1,592.5	574.2	1,682.9	0.64	0.03	-0.64
11,323.0	90.46	166.43	9,508.9	-1,683.9	596.0	1,776.9	1.51	-1.49	-0.24
11,417.0	88.64	165.87	9,509.6	-1,775.1	618.5	1,870.9	2.03	-1.94	-0.60
11,512.0	88.22	165.75	9,512.2	-1,867.2	641.8	1,965.8	0.46	-0.44	-0.13
11,606.0	89.33	166.26	9,514.2	-1,958.4	664.5	2,059.8	1.30	1.18	0.54
11,700.0	89.78	166.27	9,515.0	-2,049.7	686.9	2,153.8	0.48	0.48	0.01
11,795.0	90.04	166.20	9,515.1	-2,141.9	709.5	2,248.8	0.28	0.27	-0.07
11,889.0	90.10	165.25	9,515.0	-2,233.0	732.6	2,342.8	1.01	0.06	-1.01
11,983.0	90.39	164.93	9,514.6	-2,323.9	756.8	2,436.8	0.46	0.31	-0.34
12,077.0	89.90	166.74	9,514.3	-2,415.0	779.8	2,530.8	1.99	-0.52	1.93
12,171.0	89.71	166.74	9,514.7	-2,506.5	801.4	2,624.8	0.20	-0.20	0.00
12,265.0	90.32	166.72	9,514.6	-2,598.0	823.0	2,718.8	0.65	0.65	-0.02
12,360.0	90.63	166.58	9,513.9	-2,690.4	844.9	2,813.8	0.36	0.33	-0.15
12,452.0	90.32	168.01	9,513.1	-2,780.2	865.1	2,905.7	1.59	-0.34	1.55
12,544.0	89.36	167.94	9,513.3	-2,870.2	884.3	2,997.7	1.05	-1.04	-0.08
12,637.0	89.30	167.58	9,514.4	-2,961.0	904.0	3,090.7	0.39	-0.06	-0.39
12,729.0	90.10	167.67	9,514.9	-3,050.9	923.7	3,182.6	0.88	0.87	0.10
12,821.0	90.24	167.04	9,514.6	-3,140.7	943.9	3,274.6	0.70	0.15	-0.68

Company:	QEP Energy (TX)	**Local Co-ordinate Reference:**	Well UL 1933 E10 05SC
Project:	Andrews County, TX (NAD27 - Grid)	**TVD Reference:**	KB @ 2983.0usft (Unit 413)
Site:	UL 1933 Pad	**MD Reference:**	KB @ 2983.0usft (Unit 413)
Well:	UL 1933 E10 05SC	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	EDM 5000.15 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)
12,913.0	90.69	166.93	9,513.9	-3,230.3	964.6	3,366.6	0.50	0.49	-0.12
13,005.0	89.78	168.90	9,513.5	-3,320.2	983.8	3,458.6	2.36	-0.99	2.14
13,098.0	90.18	169.38	9,513.6	-3,411.6	1,001.4	3,551.5	0.67	0.43	0.52
13,190.0	90.18	170.44	9,513.3	-3,502.2	1,017.5	3,643.3	1.15	0.00	1.15
13,282.0	91.33	170.91	9,512.1	-3,592.9	1,032.4	3,735.0	1.35	1.25	0.51
13,374.0	90.55	170.73	9,510.5	-3,683.7	1,047.1	3,826.7	0.87	-0.85	-0.20
13,467.0	90.80	170.05	9,509.4	-3,775.4	1,062.6	3,919.5	0.78	0.27	-0.73
13,559.0	88.52	166.85	9,510.0	-3,865.5	1,081.0	4,011.4	4.27	-2.48	-3.48
13,651.0	89.01	166.70	9,512.0	-3,955.1	1,102.0	4,103.4	0.56	0.53	-0.16
13,745.0	88.26	165.75	9,514.2	-4,046.4	1,124.4	4,197.4	1.29	-0.80	-1.01
13,840.0	89.89	166.78	9,515.7	-4,138.6	1,147.0	4,292.3	2.03	1.72	1.08
13,934.0	90.17	165.44	9,515.7	-4,229.9	1,169.5	4,386.3	1.46	0.30	-1.43
14,029.0	91.29	165.77	9,514.5	-4,321.9	1,193.2	4,481.3	1.23	1.18	0.35
14,124.0	91.75	165.85	9,512.0	-4,413.9	1,216.4	4,576.3	0.49	0.48	0.08
14,218.0	90.34	165.28	9,510.3	-4,505.0	1,239.9	4,670.3	1.62	-1.50	-0.61
14,313.0	90.60	165.24	9,509.5	-4,596.8	1,264.0	4,765.2	0.28	0.27	-0.04
14,407.0	89.92	165.97	9,509.0	-4,687.9	1,287.4	4,859.2	1.06	-0.72	0.78
14,501.0	89.90	165.47	9,509.2	-4,779.0	1,310.6	4,953.2	0.53	-0.02	-0.53
14,596.0	88.61	164.91	9,510.4	-4,870.8	1,334.9	5,048.2	1.48	-1.36	-0.59
14,690.0	88.43	166.95	9,512.9	-4,962.0	1,357.7	5,142.2	2.18	-0.19	2.17
14,784.0	90.55	168.22	9,513.7	-5,053.7	1,377.9	5,236.1	2.63	2.26	1.35
14,879.0	91.53	168.44	9,512.0	-5,146.8	1,397.1	5,331.0	1.06	1.03	0.23
14,973.0	90.64	169.52	9,510.2	-5,239.0	1,415.1	5,424.9	1.49	-0.95	1.15
15,068.0	90.24	167.39	9,509.5	-5,332.1	1,434.1	5,519.9	2.28	-0.42	-2.24
15,162.0	91.15	167.27	9,508.3	-5,423.8	1,454.7	5,613.8	0.98	0.97	-0.13
15,256.0	90.28	168.10	9,507.2	-5,515.6	1,474.8	5,707.8	1.28	-0.93	0.88
15,350.0	90.59	167.66	9,506.4	-5,607.5	1,494.5	5,801.8	0.57	0.33	-0.47
15,445.0	90.67	169.46	9,505.4	-5,700.6	1,513.3	5,896.7	1.90	0.08	1.89
15,539.0	89.37	169.98	9,505.4	-5,793.1	1,530.1	5,990.5	1.49	-1.38	0.55
15,633.0	89.44	170.58	9,506.3	-5,885.8	1,546.0	6,084.3	0.64	0.07	0.64
15,728.0	89.79	170.73	9,507.0	-5,979.5	1,561.4	6,179.0	0.40	0.37	0.16
15,822.0	89.27	170.19	9,507.7	-6,072.2	1,577.0	6,272.8	0.80	-0.55	-0.57
15,917.0	89.71	170.22	9,508.6	-6,165.8	1,593.2	6,367.6	0.46	0.46	0.03
16,011.0	90.00	169.41	9,508.8	-6,258.3	1,609.8	6,461.4	0.92	0.31	-0.86
16,106.0	88.21	167.34	9,510.3	-6,351.3	1,628.9	6,556.3	2.88	-1.88	-2.18
16,200.0	88.17	166.95	9,513.3	-6,442.9	1,649.8	6,650.3	0.42	-0.04	-0.41
16,294.0	87.94	167.06	9,516.5	-6,534.5	1,670.9	6,744.2	0.27	-0.24	0.12
16,389.0	87.91	167.10	9,519.9	-6,627.0	1,692.2	6,839.1	0.05	-0.03	0.04
16,483.0	88.87	166.47	9,522.6	-6,718.5	1,713.7	6,933.1	1.22	1.02	-0.67
16,577.0	90.34	166.54	9,523.2	-6,809.9	1,735.6	7,027.1	1.57	1.56	0.07
16,672.0	90.01	164.72	9,522.9	-6,901.9	1,759.2	7,122.1	1.95	-0.35	-1.92
16,766.0	91.30	165.13	9,521.8	-6,992.7	1,783.6	7,216.0	1.44	1.37	0.44
16,860.0	92.14	165.50	9,519.0	-7,083.6	1,807.4	7,310.0	0.98	0.89	0.39

Company:	QEP Energy (TX)	**Local Co-ordinate Reference:**	Well UL 1933 E10 05SC
Project:	Andrews County, TX (NAD27 - Grid)	**TVD Reference:**	KB @ 2983.0usft (Unit 413)
Site:	UL 1933 Pad	**MD Reference:**	KB @ 2983.0usft (Unit 413)
Well:	UL 1933 E10 05SC	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	EDM 5000.15 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)
16,955.0	91.33	165.73	9,516.1	-7,175.5	1,831.0	7,404.9	0.89	-0.85	0.24
17,050.0	91.04	166.82	9,514.2	-7,267.8	1,853.6	7,499.9	1.19	-0.31	1.15
17,145.0	90.87	166.90	9,512.6	-7,360.3	1,875.1	7,594.9	0.20	-0.18	0.08
17,239.0	90.03	167.47	9,511.9	-7,452.0	1,896.0	7,688.9	1.08	-0.89	0.61
17,333.0	89.43	167.53	9,512.3	-7,543.7	1,916.3	7,782.9	0.64	-0.64	0.06
17,427.0	89.80	168.09	9,512.9	-7,635.6	1,936.2	7,876.8	0.71	0.39	0.60
17,521.0	90.28	170.17	9,512.9	-7,727.9	1,953.9	7,970.7	2.27	0.51	2.21
17,616.0	89.08	169.06	9,513.4	-7,821.4	1,971.0	8,065.6	1.72	-1.26	-1.17
17,710.0	87.94	167.72	9,515.8	-7,913.4	1,989.9	8,159.5	1.87	-1.21	-1.43
17,804.0	88.35	168.20	9,518.9	-8,005.3	2,009.5	8,253.4	0.67	0.44	0.51
17,898.0	87.82	167.15	9,522.0	-8,097.1	2,029.6	8,347.3	1.25	-0.56	-1.12
17,993.0	89.90	168.67	9,523.9	-8,189.9	2,049.5	8,442.2	2.71	2.19	1.60
18,087.0	88.75	166.83	9,525.0	-8,281.8	2,069.4	8,536.2	2.31	-1.22	-1.96
18,181.0	89.09	167.01	9,526.8	-8,373.3	2,090.7	8,630.2	0.41	0.36	0.19
18,275.0	90.14	167.62	9,527.4	-8,465.0	2,111.3	8,724.2	1.29	1.12	0.65
18,370.0	89.16	165.44	9,528.0	-8,557.4	2,133.5	8,819.2	2.52	-1.03	-2.29
18,464.0	89.03	165.15	9,529.5	-8,648.3	2,157.3	8,913.1	0.34	-0.14	-0.31
18,558.0	88.26	165.68	9,531.7	-8,739.3	2,181.0	9,007.1	0.99	-0.82	0.56
18,653.0	88.75	167.06	9,534.2	-8,831.5	2,203.4	9,102.0	1.54	0.52	1.45
18,747.0	89.87	167.90	9,535.3	-8,923.3	2,223.7	9,196.0	1.49	1.19	0.89
18,842.0	90.64	167.54	9,534.9	-9,016.1	2,243.9	9,291.0	0.89	0.81	-0.38
18,936.0	88.82	167.00	9,535.3	-9,107.8	2,264.7	9,385.0	2.02	-1.94	-0.57
19,030.0	90.14	167.41	9,536.2	-9,199.5	2,285.5	9,479.0	1.47	1.40	0.44
19,124.0	90.35	166.90	9,535.8	-9,291.1	2,306.4	9,573.0	0.59	0.22	-0.54
19,219.0	89.51	166.53	9,535.9	-9,383.6	2,328.2	9,667.9	0.97	-0.88	-0.39
19,313.0	90.74	166.93	9,535.7	-9,475.1	2,349.8	9,761.9	1.38	1.31	0.43
19,408.0	88.47	164.76	9,536.4	-9,567.2	2,373.0	9,856.9	3.31	-2.39	-2.28
19,502.0	88.47	165.07	9,538.9	-9,657.9	2,397.5	9,950.9	0.33	0.00	0.33
19,597.0	88.99	166.77	9,541.0	-9,750.0	2,420.6	10,045.8	1.87	0.55	1.79
19,691.0	89.43	166.54	9,542.3	-9,841.5	2,442.3	10,139.8	0.53	0.47	-0.24
19,786.0	89.78	167.39	9,542.9	-9,934.0	2,463.7	10,234.8	0.97	0.37	0.89
19,880.0	89.96	169.24	9,543.1	-10,026.1	2,482.7	10,328.8	1.98	0.19	1.97
19,974.0	91.99	170.20	9,541.5	-10,118.5	2,499.5	10,422.6	2.39	2.16	1.02
20,069.0	89.10	168.90	9,540.6	-10,211.9	2,516.7	10,517.4	3.34	-3.04	-1.37
20,163.0	89.23	169.16	9,542.0	-10,304.2	2,534.6	10,611.3	0.31	0.14	0.28
20,257.0	88.92	168.69	9,543.5	-10,396.4	2,552.7	10,705.2	0.60	-0.33	-0.50
20,351.0	88.84	169.18	9,545.4	-10,488.7	2,570.7	10,799.1	0.53	-0.09	0.52
20,446.0	88.98	169.56	9,547.2	-10,582.0	2,588.2	10,893.9	0.43	0.15	0.40
20,540.0	89.36	169.96	9,548.5	-10,674.5	2,604.9	10,987.8	0.59	0.40	0.43
20,635.0	90.56	171.00	9,548.6	-10,768.2	2,620.6	11,082.5	1.67	1.26	1.09
20,730.0	89.85	169.94	9,548.3	-10,861.9	2,636.4	11,177.3	1.34	-0.75	-1.12
20,826.0	90.31	169.26	9,548.1	-10,956.3	2,653.7	11,273.1	0.86	0.48	-0.71
20,920.0	91.68	169.59	9,546.5	-11,048.7	2,670.9	11,367.0	1.50	1.46	0.35

Company:	QEP Energy (TX)	**Local Co-ordinate Reference:**	Well UL 1933 E10 05SC
Project:	Andrews County, TX (NAD27 - Grid)	**TVD Reference:**	KB @ 2983.0usft (Unit 413)
Site:	UL 1933 Pad	**MD Reference:**	KB @ 2983.0usft (Unit 413)
Well:	UL 1933 E10 05SC	**North Reference:**	Grid
Wellbore:	Original Hole	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**Database:**	EDM 5000.15 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)
21,015.0	92.61	170.04	9,542.9	-11,142.1	2,687.7	11,461.7	1.09	0.98	0.47
21,107.3	93.47	170.02	9,538.0	-11,232.9	2,703.7	11,553.7	0.94	0.94	-0.02
CROSS 100' S HL - 21107.3' MD									
21,109.0	93.49	170.02	9,537.9	-11,234.6	2,704.0	11,555.4	0.94	0.94	-0.02
21,145.0	93.92	170.26	9,535.6	-11,270.0	2,710.1	11,591.2	1.37	1.19	0.67
LAST SURVEY - 21145.0' MD									
21,200.0	93.92	170.26	9,531.8	-11,324.1	2,719.4	11,646.0	0.00	0.00	0.00
PTB - 21200.0' MD (8 FSL, 1090 FWL) - UL 1933 E10 05SC									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
9,258.4	9,241.6	206.1	191.6	CROSS 100' N HL - 9258.4' MD
21,107.3	9,538.0	-11,232.9	2,703.7	CROSS 100' S HL - 21107.3' MD
21,145.0	9,535.6	-11,270.0	2,710.1	LAST SURVEY - 21145.0' MD
21,200.0	9,531.8	-11,324.1	2,719.4	PTB - 21200.0' MD (8 FSL, 1090 FWL)

Checked By: _____ Approved By: _____ Date: _____

Total Directional Services, LLC
USA Operations

Final MWD Survey Certification

Andrews County, Texas

Client: QEP Energy

Well Name: UL 1933 E10 05 SC

Total Job No: SW-200562

API No: 42-003-48278

Start Date: 11/17/2020

End Date: 12/18/2020

Measured Start Depth: 0'

Measured End Depth: 21200'

I, Drew Weinstein, certify that; I am employed by Total Directional Services, LLC and we conducted or supervised the taking of these open hole MWD surveys at the request of this client. This data is true, correct, complete and within the limitations of the tool as set forth by Total Directional Services, LLC. I am authorized and qualified to make this report and have reviewed this report and find that it conforms to the principals and procedures as set forth by Total Directional Services, LLC.

Date: 12/18/2020

Signed: Drew Weinstein