



EQT (Chevron Data) 02-13-21

Marshall County, WV Chevron

Longworth

M09H

OH

Design: Longworth 9H As Drilled

Standard Survey Report

26 July, 2021

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Environmental Protection

12/16/2022



EQT
Survey Report

Database: EDM_Definitive	Local Co-ordinate Reference: Well M09H
Company: EQT (Chevron Data) 02-13-21	TVD Reference: Air RKB @ 1294.000usft (Highlands 9)
Project: Marshall County, WV Chevron	MD Reference: Air RKB @ 1294.000usft (Highlands 9)
Site: Longworth	North Reference: True
Well: M09H	Survey Calculation Method: Minimum Curvature
Wellbore: OH	
Design: Longworth 9H As Drilled	

Project Marshall County, WV Chevron

Map System: US State Plane 1983	System Datum: Mean Sea Level
Geo Datum: North American Datum 1983	
Map Zone: West Virginia Northern Zone	

Site Longworth

Site Position:	Northing: 493,086.404 usft	Latitude: 39.85
From: Map	Easting: 1,624,022.636 usft	Longitude: -80.73
Position Uncertainty: 0.000 usft	Slot Radius: 13-3/16 "	Grid Convergence: -0.7825 °

Well M09H

Well Position +N/-S 0.000 usft	Northing: 493,049.078 usft	Latitude: 39.8472141
+E/-W 0.000 usft	Easting: 1,624,171.035 usft	Longitude: 80.7264037°W
Position Uncertainty 0.000 usft	Wellhead Elevation: 0.000 usft	Ground Level: 1,270.000 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	5/16/2016	-8.7191	67.0777	52,269.26047683

Design Longworth 9H As Drilled

Audit Notes:

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Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.000		
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.000	0.000	0.000	142.267

Survey Program Date 7/26/2021

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	576.400	Surface Gyro (OH)	NS-GYRO-MS c	North sensing gyrocompassing m/s c
0.00	16,158.000	Batch corrected top hole and Halo (OH)	11_MWD+IFR1+AX+Sag c	A007Mb: IFR dec & axial + sag corrections c

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.000	0.000	0.000	0.000	-1,294.000	0.000	0.000	0.000	0.00000	0.00000	0.00000
100.000	0.370	247.180	99.999	-1,194.001	-0.125	-0.298	-0.083	0.37000	0.37000	0.00000
125.000	0.310	224.040	124.999	-1,169.001	-0.205	-0.419	-0.094	0.59405	-0.24000	-92.56000
150.000	0.090	230.940	149.999	-1,144.001	-0.266	-0.481	-0.084	0.88367	-0.88000	27.60000
175.000	0.130	262.240	174.999	-1,119.001	-0.282	-0.525	-0.098	0.28300	0.16000	125.20000
200.000	0.230	301.510	199.999	-1,094.001	-0.260	-0.596	-0.159	0.61325	0.40000	157.08000
225.000	0.160	273.540	224.998	-1,069.002	-0.232	-0.673	-0.229	0.46471	-0.28000	-111.88000
250.000	0.030	341.060	249.998	-1,044.002	-0.223	-0.710	-0.258	0.60438	-0.52000	270.08000



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Site:	Longworth	North Reference:	True
Well:	M09H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 9H As Drilled		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
275.000	0.070	215.680	274.998	-1,019.002	-0.229	-0.721	-0.260	0.36292	0.16000	-501.52000
300.000	0.360	233.270	299.998	-994.002	-0.289	-0.793	-0.257	1.17614	1.16000	70.36000
325.000	0.460	229.440	324.998	-969.002	-0.401	-0.932	-0.253	0.41453	0.40000	-15.32000
350.000	0.450	234.600	349.997	-944.003	-0.523	-1.088	-0.252	0.16865	-0.04000	20.64000
375.000	0.590	238.130	374.996	-919.004	-0.648	-1.278	-0.269	0.57421	0.56000	14.12000
400.000	0.530	240.540	399.994	-894.005	-0.773	-1.488	-0.299	0.25778	-0.24000	9.64000
425.000	0.380	245.220	424.994	-869.006	-0.864	-1.664	-0.334	0.61765	-0.60000	18.72000
450.000	0.380	261.610	449.993	-844.007	-0.911	-1.821	-0.394	0.43333	0.00000	65.56000
475.000	0.440	236.910	474.993	-819.007	-0.976	-1.983	-0.442	0.73967	0.24000	-98.80000
500.000	0.450	222.590	499.992	-794.008	-1.100	-2.130	-0.433	0.44549	0.04000	-57.28000
525.000	0.370	213.070	524.991	-769.009	-1.240	-2.241	-0.390	0.41926	-0.32000	-38.08000
550.000	0.420	230.050	549.991	-744.009	-1.367	-2.355	-0.360	0.50673	0.20000	67.92000
575.000	0.350	170.880	574.990	-719.010	-1.501	-2.413	-0.290	1.54000	-0.28000	-236.68000
576.400	0.360	167.700	576.390	-717.610	-1.510	-2.412	-0.282	1.57795	0.71429	-227.14285
727.000	0.770	167.650	726.982	-567.018	-2.960	-2.094	1.060	0.27224	0.27224	-0.03320
728.000	0.770	167.180	727.982	-566.018	-2.974	-2.091	1.072	0.63161	0.00000	-47.00000
774.000	0.740	166.950	773.978	-520.022	-3.564	-1.956	1.622	0.06555	-0.06522	-0.50000
853.000	0.170	95.270	852.976	-441.024	-4.072	-1.724	2.165	0.89275	-0.72152	-90.73418
947.000	1.090	203.830	946.970	-347.030	-4.903	-1.946	2.686	1.22915	0.97872	115.48936
1,040.000	2.300	190.880	1,039.928	-254.072	-7.545	-2.656	4.341	1.35654	1.30108	-13.92473
1,134.000	3.210	185.860	1,133.819	-160.181	-12.015	-3.281	7.495	1.00062	0.96809	-5.34043
1,228.000	3.850	183.150	1,227.640	-66.360	-17.784	-3.723	11.787	0.70342	0.68085	-2.88298
1,322.000	4.910	173.520	1,321.365	27.365	-24.933	-3.442	17.612	1.36872	1.12766	-10.24468
1,415.000	5.670	166.340	1,413.970	119.970	-33.351	-1.908	25.209	1.08223	0.81720	-7.72043
1,509.000	5.680	170.490	1,507.509	213.509	-42.451	-0.043	33.548	0.43660	0.01064	4.41488
1,603.000	5.890	176.180	1,601.031	307.031	-51.852	1.047	41.649	0.64942	0.22340	6.05319
1,696.000	5.410	186.540	1,693.582	399.582	-60.969	0.866	48.748	1.20988	-0.51613	11.13979
1,790.000	5.940	193.850	1,787.122	493.122	-70.094	-0.803	54.944	0.95246	0.56383	7.77660
1,884.000	6.120	188.590	1,880.602	586.602	-79.771	-2.716	61.427	0.61798	0.19149	-5.59574
1,977.000	7.010	185.940	1,972.992	678.992	-90.317	-4.044	68.955	1.01067	0.95699	-2.84946
2,071.000	7.730	183.660	2,066.215	772.215	-102.332	-5.041	77.847	0.82659	0.76596	-2.42553
2,165.000	6.240	181.740	2,159.515	865.515	-113.747	-5.600	86.533	1.60423	-1.58511	-2.04255
2,271.000	5.670	173.100	2,264.944	970.944	-124.704	-5.146	95.476	1.00065	-0.53774	-8.15094
2,364.000	3.950	174.960	2,357.613	1,063.613	-132.457	-4.312	102.118	1.85681	-1.84946	2.00000
2,456.000	3.150	167.150	2,449.437	1,155.437	-138.078	-3.472	107.077	1.01416	-0.86957	-8.48913
2,548.000	1.930	169.560	2,541.345	1,247.345	-142.066	-2.629	110.747	1.33087	-1.32609	2.61957
2,640.000	1.400	156.000	2,633.306	1,339.306	-144.616	-1.891	113.216	0.71400	-0.57609	-14.73913
2,732.000	0.910	146.790	2,725.287	1,431.287	-146.254	-1.034	115.036	0.56787	-0.53261	-10.01087
2,824.000	1.480	314.340	2,817.279	1,523.279	-146.035	-1.483	114.587	2.58338	0.61957	182.11957
2,917.000	1.840	303.240	2,910.240	1,616.240	-144.377	-3.591	111.986	0.51731	0.38710	-11.93548
3,010.000	1.840	315.780	3,003.192	1,709.192	-142.489	-5.881	109.092	0.43208	0.00000	13.48387

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Wellbore:	OH		
Design:	Longworth 9H As Drilled		

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3,102.000	2.520	301.680	3,095.126	1,801.126	-140.368	-8.632	105.731	0.93609	0.73913	-15.32609
3,195.000	3.060	297.440	3,188.015	1,894.015	-138.150	-12.575	101.564	0.62122	0.58065	-4.55914
3,287.000	2.140	305.520	3,279.920	1,985.920	-136.021	-16.153	97.690	1.07401	-1.00000	8.78261
3,380.000	1.720	308.810	3,372.867	2,078.867	-134.137	-18.654	94.670	0.46688	-0.45161	3.53763
3,472.000	1.250	308.280	3,464.836	2,170.836	-132.650	-20.517	92.354	0.51108	-0.51087	-0.57609
3,564.000	1.080	328.810	3,556.817	2,262.817	-131.287	-21.754	90.518	0.48654	-0.18478	22.31522
3,656.000	1.460	322.720	3,648.794	2,354.795	-129.612	-22.913	88.485	0.43775	0.41304	-6.61957
3,749.000	0.920	329.600	3,741.774	2,447.774	-128.026	-24.008	86.560	0.59959	-0.58065	7.39785
3,841.000	1.180	334.660	3,833.759	2,539.759	-126.532	-24.788	84.902	0.29977	0.28261	5.50000
3,933.000	0.880	329.240	3,925.744	2,631.744	-125.069	-25.554	83.275	0.34249	-0.32609	-5.89130
4,026.000	0.360	359.450	4,018.738	2,724.738	-124.163	-25.922	82.334	0.64197	-0.55914	32.48387
4,118.000	0.450	341.390	4,110.736	2,816.736	-123.532	-26.040	81.762	0.16861	0.09783	-19.63044
4,210.000	0.240	337.160	4,202.734	2,908.734	-123.012	-26.230	81.235	0.22978	-0.22826	-4.59783
4,303.000	0.220	53.200	4,295.733	3,001.734	-122.726	-26.163	81.049	0.30513	-0.02151	81.76344
4,396.000	0.210	329.080	4,388.733	3,094.733	-122.472	-26.108	80.883	0.30985	-0.01075	-90.45162
4,488.000	0.230	7.840	4,480.732	3,186.732	-122.145	-26.169	80.586	0.16002	0.02174	42.13044
4,581.000	0.270	300.960	4,573.732	3,279.732	-121.847	-26.332	80.252	0.29844	0.04301	-71.91398
4,673.000	0.340	280.780	4,665.730	3,371.730	-121.685	-26.786	79.845	0.13822	0.07609	-21.93478
4,766.000	0.400	314.960	4,758.729	3,464.729	-121.404	-27.286	79.316	0.24183	0.06452	36.75269
4,858.000	0.490	302.590	4,850.726	3,556.726	-120.965	-27.845	78.627	0.14255	0.09783	-13.44565
4,951.000	0.920	296.930	4,943.719	3,649.719	-120.412	-28.846	77.578	0.46783	0.46237	-6.08602
5,043.000	0.850	284.070	5,035.708	3,741.708	-119.912	-30.166	76.374	0.22833	-0.07609	-13.97826
5,136.000	0.610	310.340	5,128.700	3,834.700	-119.424	-31.213	75.348	0.43638	-0.25806	28.24731
5,229.000	0.810	296.870	5,221.693	3,927.693	-118.806	-32.176	74.270	0.27870	0.21505	-14.48387
5,321.000	0.740	278.250	5,313.685	4,019.685	-118.427	-33.344	73.255	0.28270	-0.07609	-20.23913
5,414.000	0.640	277.340	5,406.678	4,112.678	-118.275	-34.454	72.455	0.10817	-0.10753	-0.97849
5,507.000	0.560	271.100	5,499.673	4,205.673	-118.200	-35.423	71.803	0.11095	-0.08602	-6.70968
5,599.000	0.670	285.870	5,591.668	4,297.668	-118.044	-36.390	71.088	0.20878	0.11957	16.05435
5,657.000	0.430	273.700	5,649.665	4,355.665	-117.937	-36.934	70.671	0.45795	-0.41379	-20.98276
KOP=5751' MD										
5,751.000	0.680	294.510	5,743.661	4,449.661	-117.683	-37.793	69.944	0.33750	0.26596	22.13830
5,843.000	3.450	150.290	5,835.612	4,541.612	-119.862	-36.918	72.203	4.37102	3.01087	-156.7608
5,935.000	9.030	159.420	5,927.032	4,633.032	-129.032	-33.005	81.850	6.14138	6.06522	9.92391
6,028.000	16.350	161.720	6,017.700	4,723.700	-148.321	-26.324	101.193	7.88816	7.87097	2.47312
6,120.000	23.090	162.580	6,104.254	4,810.254	-177.863	-16.851	130.355	7.33268	7.32609	0.93478
6,212.000	29.100	163.150	6,186.839	4,892.839	-216.522	-4.955	168.210	6.53822	6.53261	0.61957
6,305.000	37.080	159.890	6,264.698	4,970.699	-264.574	11.268	216.141	8.78872	8.58065	-3.50538
6,397.000	45.010	155.010	6,334.047	5,040.047	-320.209	34.590	274.414	9.29132	8.61957	-5.30435
6,489.000	53.280	149.980	6,394.198	5,100.198	-381.751	66.849	342.827	9.88962	8.98913	-5.46739
6,581.000	60.750	149.090	6,444.250	5,150.250	-448.206	105.969	419.326	8.15988	8.11957	-0.96739
6,674.000	67.390	143.210	6,484.923	5,190.923	-517.519	152.603	502.682	9.12363	7.13979	-6.32258
6,766.000	75.060	139.000	6,514.523	5,220.523	-585.197	207.297	589.679	9.39348	8.33696	-4.57609

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M09H LP											
6,791.911	76.384	139.669	6,520.913	5,226.913	-604.244	223.659	614.756	5.69033	5.10995	2.58351	
Top of Marcellus@6524' TVD											
6,803.130	76.958	139.957	6,523.500	5,229.500	-612.584	230.704	625.663	5.69033	5.11495	2.56246	
6,859.000	79.820	141.370	6,534.744	5,240.744	-654.908	265.386	680.361	5.69033	5.12281	2.52927	
6,952.000	83.960	141.070	6,547.861	5,253.861	-726.665	323.041	772.395	4.46305	4.45161	-0.32258	
M09H LP2											
6,992.227	85.617	140.702	6,551.515	5,257.515	-757.747	348.313	812.443	4.21898	4.11929	-0.91556	
7,044.000	87.750	140.230	6,554.510	5,260.510	-797.607	381.211	864.100	4.21898	4.11978	-0.91109	
LP=7137'MD/ 8557' TVD											
7,137.000	88.790	140.240	6,557.317	5,263.317	-869.060	440.670	956.998	1.11833	1.11828	0.01075	
7,230.000	88.860	141.130	6,559.224	5,265.224	-940.996	499.580	1,049.942	0.95974	0.07527	0.95699	
7,322.000	89.030	140.700	6,560.918	5,266.918	-1,012.395	557.574	1,141.901	0.50252	0.18478	-0.46739	
7,415.000	89.230	140.780	6,562.330	5,268.330	-1,084.395	616.421	1,234.857	0.23162	0.21505	0.08602	
7,508.000	89.530	139.990	6,563.337	5,269.337	-1,156.032	675.716	1,327.801	0.90860	0.32258	-0.84946	
7,600.000	89.400	139.820	6,564.196	5,270.196	-1,226.407	734.967	1,419.718	0.23261	-0.14130	-0.18478	
7,693.000	89.430	139.240	6,565.145	5,271.145	-1,297.153	795.325	1,512.607	0.62446	0.03226	-0.62366	
7,786.000	89.500	139.760	6,566.014	5,272.014	-1,367.867	855.721	1,605.494	0.56416	0.07527	0.55914	
7,878.000	89.430	141.060	6,566.873	5,272.873	-1,438.760	914.348	1,697.440	1.41503	-0.07609	1.41304	
7,971.000	88.890	140.750	6,568.236	5,274.236	-1,510.929	972.988	1,790.403	0.66950	-0.58065	-0.33333	
8,064.000	89.060	141.990	6,569.900	5,275.900	-1,583.567	1,031.036	1,883.375	1.34559	0.18280	1.33333	
8,156.000	88.260	142.280	6,572.051	5,278.051	-1,656.177	1,087.490	1,975.349	0.92491	-0.86957	0.31522	
8,249.000	88.560	140.590	6,574.632	5,280.632	-1,728.863	1,145.442	2,068.300	1.84492	0.32258	-1.81720	
8,342.000	88.930	140.160	6,576.669	5,282.669	-1,800.477	1,204.739	2,161.226	0.60989	0.39785	-0.46237	
8,434.000	88.930	139.830	6,578.387	5,284.387	-1,870.936	1,263.872	2,253.138	0.35863	0.00000	-0.35870	
8,527.000	89.230	140.210	6,579.880	5,285.880	-1,942.189	1,323.618	2,346.054	0.52055	0.32258	0.40860	
8,620.000	89.300	140.500	6,581.073	5,287.073	-2,013.795	1,382.950	2,438.994	0.32076	0.07527	0.31183	
8,712.000	89.460	140.790	6,582.069	5,288.069	-2,084.928	1,441.286	2,530.952	0.35999	0.17391	0.31522	
8,805.000	89.670	142.990	6,582.775	5,288.775	-2,158.096	1,498.678	2,623.941	2.37627	0.22581	2.36559	
8,897.000	89.300	143.910	6,583.602	5,289.602	-2,231.999	1,553.463	2,715.917	1.07780	-0.40217	1.00000	
8,990.000	89.930	144.200	6,584.227	5,290.227	-2,307.288	1,608.053	2,808.869	0.74574	0.67742	0.31183	
9,082.000	89.120	142.720	6,584.989	5,290.989	-2,381.199	1,662.824	2,900.843	1.83381	-0.88043	-1.60870	
9,175.000	89.630	142.270	6,586.004	5,292.004	-2,454.971	1,719.442	2,993.836	0.73132	0.54839	-0.48387	
9,268.000	89.430	140.810	6,586.767	5,292.767	-2,527.790	1,777.281	3,086.823	1.58450	-0.21505	-1.56989	
9,361.000	89.420	140.720	6,587.700	5,293.700	-2,599.820	1,836.101	3,179.786	0.09736	-0.01075	-0.09677	
9,453.000	89.560	140.240	6,588.519	5,294.519	-2,670.786	1,894.643	3,271.737	0.54346	0.15217	-0.52174	
9,546.000	89.490	140.820	6,589.290	5,295.290	-2,742.575	1,953.758	3,364.691	0.62816	-0.07527	0.62366	
9,638.000	89.760	141.810	6,589.892	5,295.892	-2,814.388	2,011.260	3,456.675	1.11537	0.29348	1.07609	
9,731.000	89.560	142.540	6,590.444	5,296.444	-2,887.845	2,068.291	3,549.672	0.81386	-0.21505	0.78495	
9,824.000	89.690	141.710	6,591.053	5,297.053	-2,961.253	2,125.385	3,642.669	0.90333	0.13978	-0.89247	
9,916.000	88.180	141.070	6,592.762	5,298.763	-3,033.128	2,182.783	3,734.640	1.78259	-1.64130	-0.69565	
10,009.00	89.890	142.820	6,594.329	5,300.329	-3,106.342	2,240.097	3,827.618	2.63068	1.83871	1.88172	

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EQT
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M09H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M09H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 9H As Drilled		

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,101.00	89.760	144.070	6,594.610	5,300.610	-3,180.243	2,294.890	3,919.596	1.36602	-0.14130	1.35870
0										
10,194.00	89.860	142.880	6,594.918	5,300.918	-3,254.975	2,350.240	4,012.573	1.28407	0.10753	-1.27957
0										
10,287.00	88.850	141.750	6,596.127	5,302.128	-3,328.565	2,407.086	4,105.562	1.78013	-1.30108	-1.21505
0										
10,379.00	89.160	138.820	6,597.886	5,303.886	-3,399.314	2,465.854	4,197.480	3.23208	0.55435	-3.18478
0										
10,472.00	89.930	138.840	6,598.625	5,304.625	-3,469.318	2,527.073	4,290.309	0.82824	0.82796	0.02151
0										
10,564.00	89.390	138.710	6,599.170	5,305.171	-3,538.512	2,587.701	4,382.136	0.60373	-0.58696	-0.14130
0										
10,657.00	89.390	138.680	6,600.161	5,306.161	-3,608.370	2,649.084	4,474.950	0.03226	0.00000	-0.03226
0										
10,749.00	89.420	138.580	6,601.116	5,307.116	-3,677.408	2,709.885	4,566.760	0.11348	0.03261	-0.10870
0										
10,842.00	89.220	138.470	6,602.220	5,308.220	-3,747.083	2,771.474	4,659.555	0.24543	-0.21505	-0.11828
0										
10,934.00	89.290	139.790	6,603.416	5,309.416	-3,816.646	2,831.668	4,751.407	1.43668	0.07609	1.43478
0										
11,026.000	89.660	140.070	6,604.259	5,310.259	-3,887.047	2,890.887	4,843.327	0.50434	0.40217	0.30435
11,119.000	89.390	140.200	6,605.030	5,311.030	-3,958.427	2,950.497	4,936.259	0.32222	-0.29032	0.13978
0										
11,211.000	88.990	141.010	6,606.330	5,312.331	-4,029.516	3,008.879	5,028.210	0.98186	-0.43478	0.88043
11,303.000	88.920	141.670	6,608.008	5,314.008	-4,101.343	3,066.341	5,120.182	0.72130	-0.07609	0.71739
11,396.000	88.750	141.650	6,609.899	5,315.899	-4,174.272	3,124.020	5,213.158	0.18406	-0.18280	-0.02151
11,488.000	89.320	142.020	6,611.449	5,317.449	-4,246.595	3,180.861	5,305.141	0.73862	0.61957	0.40217
11,581.000	89.520	141.850	6,612.390	5,318.390	-4,319.811	3,238.197	5,398.135	0.28224	0.21505	-0.18280
0										
11,673.000	89.660	141.550	6,613.048	5,319.048	-4,392.008	3,295.216	5,490.128	0.35984	0.15217	-0.32609
11,765.000	89.560	141.590	6,613.675	5,319.675	-4,464.076	3,352.398	5,582.119	0.11707	-0.10870	0.04348
11,858.000	89.620	141.570	6,614.340	5,320.340	-4,536.938	3,410.188	5,675.110	0.06801	0.06452	-0.02151
11,950.000	89.590	141.470	6,614.974	5,320.974	-4,608.956	3,467.433	5,767.100	0.11348	-0.03261	-0.10870
12,043.00	89.490	141.740	6,615.721	5,321.721	-4,681.842	3,525.192	5,860.091	0.30959	-0.10753	0.29032
0										
12,135.00	89.460	141.800	6,616.564	5,322.564	-4,754.108	3,582.121	5,952.083	0.07291	-0.03261	0.06522
0										
12,228.00	89.120	141.690	6,617.716	5,323.716	-4,827.132	3,639.698	6,045.072	0.38425	-0.36559	-0.11828
0										
12,320.00	89.150	141.760	6,619.105	5,325.105	-4,899.348	3,696.680	6,137.058	0.08277	0.03261	0.07609
0										
12,412.00	89.290	141.710	6,620.358	5,326.358	-4,971.576	3,753.650	6,229.045	0.16159	0.15217	-0.05435
0										
12,505.00	89.290	141.530	6,621.510	5,327.510	-5,044.474	3,811.387	6,322.032	0.19353	0.00000	-0.19355
0										
12,597.00	89.320	141.690	6,622.626	5,328.626	-5,116.578	3,868.516	6,414.019	0.17693	0.03261	0.17391
0										
12,689.00	89.390	141.670	6,623.662	5,329.662	-5,188.753	3,925.557	6,506.008	0.07913	0.07609	-0.02174
0										

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EQT
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M09H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M09H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 9H As Drilled		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,782.000	89.250	141.660	6,624.765	5,330.765	-5,261.697	3,983.237	6,598.997	0.15092	-0.15054	-0.01075
12,874.000	89.220	141.830	6,625.994	5,331.994	-5,333.934	4,040.195	6,690.985	0.18762	-0.03261	0.18478
12,969.000	89.700	140.990	6,626.889	5,332.889	-5,408.185	4,099.447	6,785.969	1.01835	0.50526	-0.88421
13,061.000	89.730	141.440	6,627.347	5,333.347	-5,479.898	4,157.075	6,877.952	0.49021	0.03261	0.48913
13,154.000	89.160	141.650	6,628.248	5,334.248	-5,552.722	4,214.909	6,970.940	0.65317	-0.61290	0.22581
13,246.000	88.990	141.100	6,629.733	5,335.733	-5,624.588	4,272.329	7,062.916	0.62566	-0.18478	-0.59783
13,338.000	88.960	141.600	6,631.379	5,337.379	-5,696.426	4,329.780	7,154.889	0.54437	-0.03261	0.54348
13,431.000	88.790	141.450	6,633.204	5,339.205	-5,769.219	4,387.630	7,247.863	0.24376	-0.18280	-0.16129
13,523.000	88.790	141.320	6,635.147	5,341.147	-5,841.088	4,445.033	7,339.832	0.14127	0.00000	-0.14130
13,615.000	88.960	141.510	6,636.954	5,342.954	-5,912.989	4,502.400	7,431.804	0.27709	0.18478	0.20652
13,708.000	88.920	141.110	6,638.674	5,344.674	-5,985.567	4,560.525	7,524.775	0.43218	-0.04301	-0.43011
13,800.000	88.790	141.400	6,640.512	5,346.512	-6,057.307	4,618.092	7,616.742	0.34538	-0.14130	0.31522
13,892.000	88.860	141.170	6,642.399	5,348.399	-6,129.076	4,675.621	7,708.709	0.26127	0.07609	-0.25000
13,984.000	88.720	141.670	6,644.342	5,350.342	-6,200.980	4,732.980	7,800.678	0.56426	-0.15217	0.54348
14,076.000	88.790	141.740	6,646.341	5,352.341	-6,273.167	4,789.980	7,892.652	0.10759	0.07609	0.07609
14,169.000	88.930	141.640	6,648.191	5,354.191	-6,346.127	4,847.621	7,985.629	0.18498	0.15054	-0.10753
14,261.000	89.160	141.070	6,649.724	5,355.724	-6,417.971	4,905.066	8,077.604	0.66802	0.25000	-0.61957
14,353.000	89.400	141.300	6,650.880	5,356.880	-6,489.649	4,962.728	8,169.580	0.36131	0.26087	0.25000
14,445.000	89.330	141.620	6,651.900	5,357.900	-6,561.605	5,020.046	8,261.565	0.35603	-0.07609	0.34783
14,538.000	89.430	141.010	6,652.906	5,358.906	-6,634.195	5,078.170	8,354.547	0.66463	0.10753	-0.65591
14,630.000	89.330	140.760	6,653.902	5,359.902	-6,705.572	5,136.208	8,446.514	0.29266	-0.10870	-0.27174
14,723.000	89.360	140.760	6,654.965	5,360.965	-6,777.596	5,195.033	8,539.476	0.03226	0.03226	0.00000
14,815.000	89.030	140.580	6,656.258	5,362.258	-6,848.752	5,253.335	8,631.431	0.40858	-0.35870	-0.19565
14,907.000	88.760	140.740	6,658.032	5,364.032	-6,919.891	5,311.645	8,723.378	0.34112	-0.29348	0.17391
14,999.000	88.790	140.880	6,659.999	5,365.999	-6,991.180	5,369.766	8,815.327	0.15559	0.03261	0.15217

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EQT
Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well M09H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M09H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 9H As Drilled		

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,092.00	88.830	140.840	6,661.930	5,367.930	-7,063.296	5,428.457	8,908.279	0.06082	0.04301	-0.04301
0										
15,184.00	88.830	140.600	6,663.809	5,369.809	-7,134.495	5,486.691	9,000.226	0.26082	0.00000	-0.26087
0										
15,277.00	88.860	140.610	6,665.683	5,371.683	-7,206.349	5,545.702	9,093.168	0.03400	0.03226	0.01075
0										
15,369.00	88.760	140.590	6,667.594	5,373.594	-7,277.425	5,604.085	9,185.109	0.11085	-0.10870	-0.02174
0										
15,461.00	88.820	140.550	6,669.537	5,375.537	-7,348.470	5,662.504	9,277.048	0.07838	0.06522	-0.04348
0										
15,554.00	88.720	140.440	6,671.533	5,377.533	-7,420.210	5,721.652	9,369.982	0.15983	-0.10753	-0.11828
0										
15,646.00	88.860	140.600	6,673.476	5,379.476	-7,491.204	5,780.134	9,461.919	0.23106	0.15217	0.17391
0										
15,739.00	88.860	140.590	6,675.326	5,381.326	-7,563.049	5,839.158	9,554.861	0.01075	0.00000	-0.01075
0										
15,831.00	88.720	140.440	6,677.269	5,383.269	-7,634.038	5,897.646	9,646.797	0.22300	-0.15217	-0.16304
0										
15,923.00	88.760	140.850	6,679.292	5,385.292	-7,705.158	5,955.971	9,738.738	0.44766	0.04348	0.44565
0										
16,015.00	88.930	141.380	6,681.146	5,387.146	-7,776.756	6,013.713	9,830.700	0.60488	0.18478	0.57609
0										
16,108.00	88.890	141.130	6,682.915	5,388.915	-7,849.277	6,071.907	9,923.669	0.27219	-0.04301	-0.26882
0										
Final Survey=16136' MD/ 6683' TVD										
16,136.00	88.830	140.380	6,683.472	5,389.472	-7,870.957	6,089.617	9,951.653	2.68660	-0.21429	-2.67857
0										
M09H BHL										
16,156.72	88.830	140.380	6,683.896	5,389.896	-7,886.918	6,102.830	9,972.362	0.00000	0.00000	0.00000
5										
Projection to TD/Deepest Point of Well= 16156' MD/ 6683' TVD										
16,158.00	88.830	140.380	6,683.922	5,389.922	-7,887.900	6,103.643	9,973.637	0.00000	0.00000	0.00000
0										

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EQT
Survey Report

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Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Project:	Marshall County, WV Chevron	MD Reference:	Air RKB @ 1294.000usft (Highlands 9)
Site:	Longworth	North Reference:	True
Well:	M09H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Longworth 9H As Drilled		

Design Targets										
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(usft)	(-117.683)	(-37.793)	(usft)	(usft)			
Longworth 9H KOP	0.000	0.000	5,743.66	-117.683	-37.793	492,931.922	1,624,131.639	39.8468910	80.7265383°W	
- actual wellpath hits target center			1							
- Point										
Longworth 9H LP	0.000	0.000	6,557.31	-869.060	440.670	492,174.084	1,624,599.801	39.8448283	80.7248342°W	
- actual wellpath hits target center			7							
- Point										
Longworth 9H TD	0.000	0.000	6,683.92	-7,887.900	6,103.643	485,078.593	1,630,166.432	39.8255573	80.7046716°W	
- actual wellpath hits target center			2							
- Point										

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
6,803.130	6,523.500	Top of Marceullus@6524' TVD		0.0000		

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
5,751.000	5,743.661	-117.683	-37.793	KOP=5751' MD	
7,137.000	6,557.317	-869.060	440.670	LP=7137'MD/ 6557' TVD	
16,136.000	6,683.472	-7,870.957	6,089.617	Final Survey=16136' MD/ 6683' TVD	
16,158.000	6,683.922	-7,887.900	6,103.643	Projection to TD/Deepest Point of Well=16158' MD/ 6684' TVD	

Checked By: _____ Approved By: _____ Date: _____

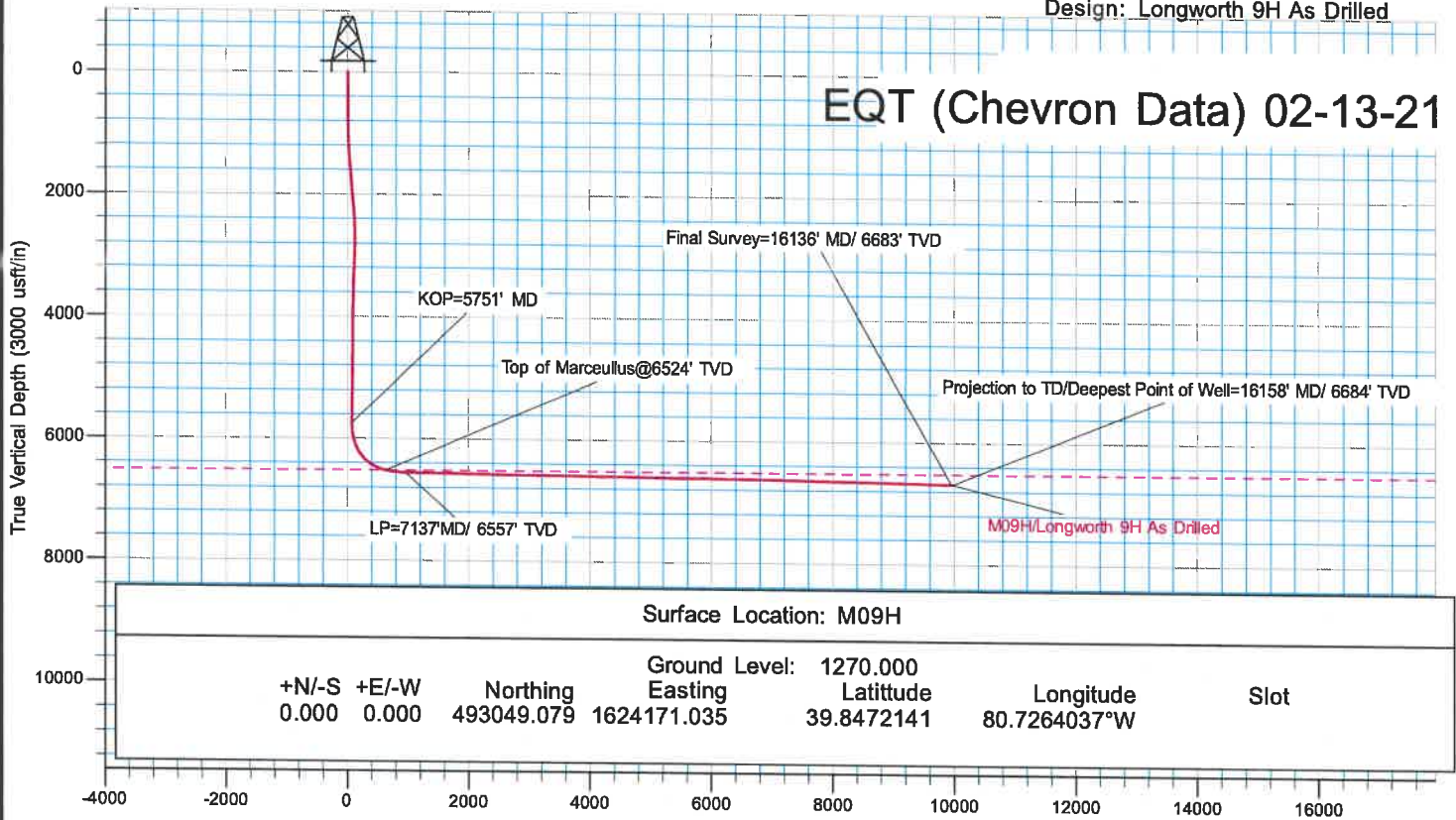
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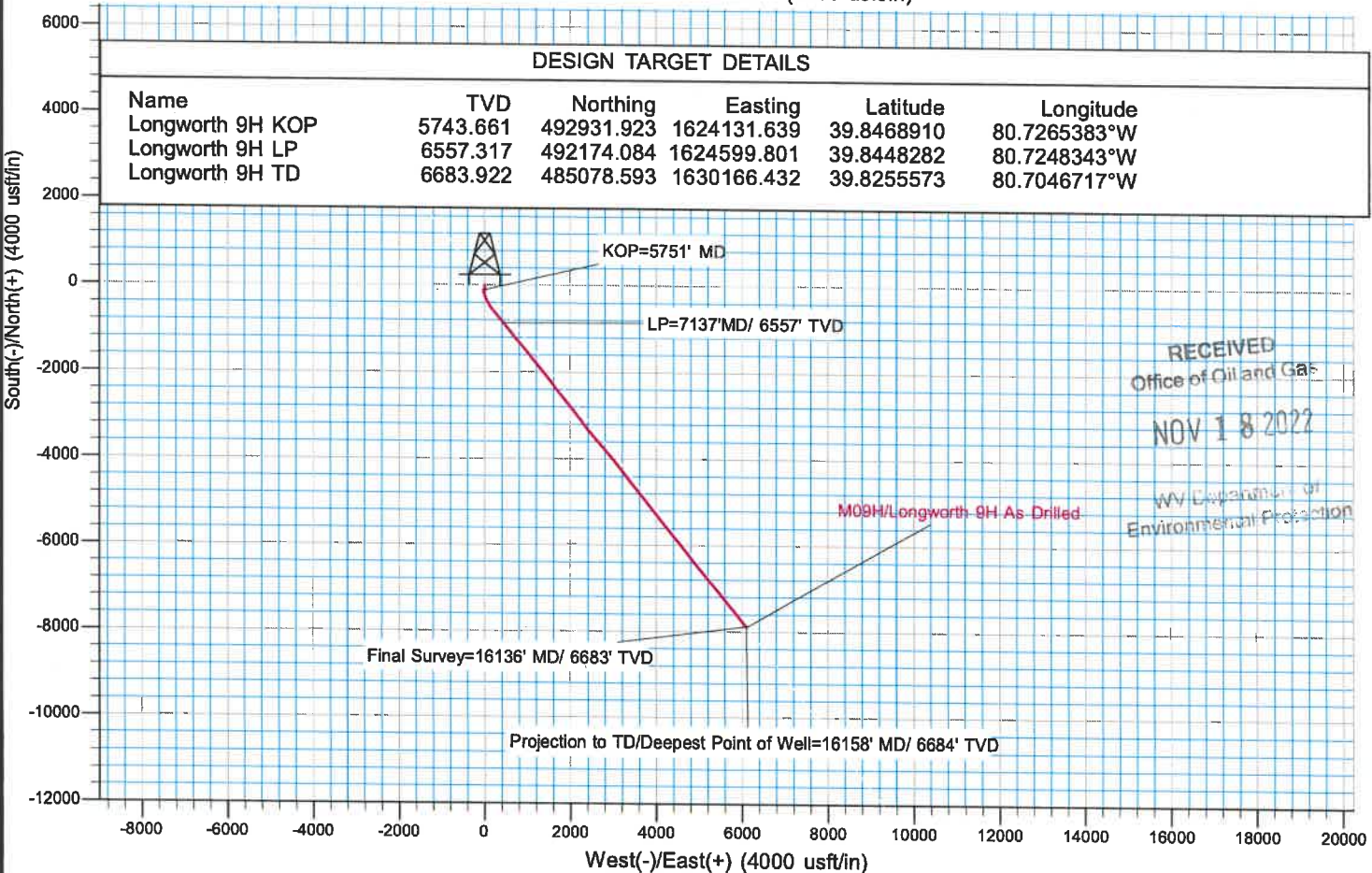
KB Elevation= Air RKB @ 1294.000usft (Highlands 9)
 Ground Elevation= 1270.000
 All measurements were taken from KB Elevation

Project: Marshall County, WV Chevron
 Site: Longworth
 Well: M09H
 Wellbore: OH
 Design: Longworth 9H As Drilled

EQT (Chevron Data) 02-13-21



Vertical Section at 142.267° (3000 usft/in)



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