

# **EQT (Chevron Data) 02-13-21**

**Marshall County, WV Chevron**

**Hines Pad EQT**

**Hines M21H**

**OH**

**Design: Hines M21H As Drilled**

## **Standard Survey Report**

**30 June, 2021**

**05/27/2022**

# EQT

## Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well Hines M21H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Project:	Marshall County, WV Chevron	MD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Site:	Hines Pad EQT	North Reference:	True
Well:	Hines M21H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Hines M21H 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: Hines Pad EQT					
Site Position:		Northing:	514,501.050 usft	Latitude:	39.91
From:	Map	Easting:	1,631,895.930 usft	Longitude:	-80.70
Position Uncertainty:	1.500 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.7653 °

Well: Hines M21H						
Well Position	+N/-S	0.000 usft	Northing:	514,404.740 usft	Latitude:	39.9061306
	+E/-W	0.000 usft	Easting:	1,632,113.350 usft	Longitude:	80.6991340°W
Position Uncertainty		0.000 usft	Wellhead Elevation:	0.000 usft	Ground Level:	1,124.998 usft

Wellbore: OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/1/2019	-7.9500	66.9667	52,381.30000000

Design: Hines M21H As Drilled					
Audit Notes:					
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	155.260	

Survey Program		Date	6/28/2021			
From (')	To (usft)	Survey (Wellbore)	Tool Name	Description		
0.00	430.999	Gyro Keeper (OH)	SDI Standard Keeper 104	Standard Wireline Keeper ver 1.0.4		
0.00	6,040.000	SDI MWD (OH)	MWD c	MWD - Standard c		

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	-1,149.998	0.000	0.000	0.000	0.00000	0.00000	0.00000
101.000	0.200	0.470	101.000	-1,048.998	0.176	0.001	-0.159	0.19802	0.19802	0.00000
126.000	0.290	10.640	125.999	-1,023.998	0.282	0.013	-0.251	0.39845	0.36000	40.68008
151.000	0.170	26.020	150.999	-998.999	0.378	0.041	-0.326	0.53563	-0.48000	61.52012
176.000	0.350	55.580	175.999	-973.999	0.454	0.121	-0.362	0.87534	0.72000	118.24024
201.000	0.350	45.390	200.998	-948.999	0.551	0.238	-0.401	0.24866	0.00000	-40.76008

# EQT

## Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well Hines M21H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Project:	Marshall County, WV Chevron	MD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Site:	Hines Pad EQT	North Reference:	True
Well:	Hines M21H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Hines M21H 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)	
226.000	0.370	61.040	225.998	-924.000	0.644	0.363	-0.433	0.40003	0.08000	62.60013	
250.999	0.430	65.530	250.997	-899.001	0.722	0.519	-0.438	0.27060	0.24000	17.96004	
275.999	0.560	71.780	275.996	-874.002	0.799	0.720	-0.424	0.56232	0.52000	25.00005	
300.999	0.680	75.040	300.995	-849.003	0.875	0.980	-0.385	0.50012	0.48000	13.04003	
325.999	0.580	66.410	325.993	-824.005	0.964	1.239	-0.357	0.55035	-0.40000	-34.52007	
350.999	0.460	56.910	350.992	-799.006	1.069	1.439	-0.369	0.58948	-0.48000	-38.00008	
375.999	0.470	48.970	375.991	-774.007	1.192	1.601	-0.412	0.26062	0.04000	-31.76006	
400.999	0.410	49.140	400.990	-749.007	1.317	1.746	-0.466	0.24006	-0.24000	0.68000	
425.999	0.600	60.130	425.989	-724.008	1.441	1.927	-0.502	0.84969	0.76000	43.96009	
<b>Final Gyro Survey=431' MD/TVD</b>											
430.999	0.480	63.340	430.989	-719.009	1.464	1.968	-0.505	2.47417	-2.40000	64.20013	
582.999	0.900	70.410	582.977	-567.020	2.149	3.662	-0.420	0.28141	0.27632	4.65133	
675.999	0.260	78.620	675.972	-474.026	2.436	4.557	-0.305	0.69219	-0.68817	8.82797	
769.998	0.290	310.700	769.971	-380.026	2.633	4.586	-0.472	0.52590	0.03191	-136.08538	
862.998	0.590	326.630	862.968	-287.029	3.187	4.144	-1.160	0.34533	0.32258	17.12907	
956.998	0.470	336.710	956.964	-193.034	3.945	3.725	-2.024	0.16120	-0.12766	10.72343	
1,050.998	0.480	122.870	1,050.963	-99.035	4.085	3.903	-2.077	0.96690	0.01064	155.48968	
<b>Nudge KOP=1051' MD/TVD</b>											
1,051.000	0.480	122.870	1,050.965	-99.033	4.085	3.903	-2.077	0.00000	0.00000	0.00000	
1,143.998	1.880	156.680	1,143.941	-6.057	2.473	4.834	-0.223	1.61838	1.50541	36.35573	
1,237.997	3.260	158.570	1,237.844	87.846	-1.431	6.421	3.987	1.47065	1.46809	2.01064	
1,331.997	3.810	168.660	1,331.666	181.668	-6.981	8.012	9.694	0.88126	0.58511	10.73406	
1,424.997	4.650	169.200	1,424.411	274.414	-13.714	9.326	16.358	0.90423	0.90323	0.58065	
1,518.997	5.560	171.300	1,518.037	368.040	-21.958	10.729	24.433	0.98813	0.96809	2.23405	
1,611.997	6.250	176.170	1,610.544	460.546	-31.463	11.749	33.492	0.91627	0.74194	5.23657	
1,705.997	6.550	175.700	1,703.957	553.960	-41.914	12.492	43.295	0.32398	0.31915	-0.50000	
1,798.996	7.290	171.880	1,796.280	646.282	-53.045	13.723	53.920	0.93663	0.79570	-4.10754	
1,892.996	7.290	173.020	1,889.520	739.522	-64.869	15.291	65.314	0.15389	0.00000	1.21277	
1,986.996	6.490	176.470	1,982.840	832.843	-76.091	16.342	75.947	0.95784	-0.85107	3.67022	
2,032.996	6.420	177.410	2,028.549	878.551	-81.255	16.619	80.752	0.27556	-0.15217	2.04348	
2,132.996	6.890	175.790	2,127.874	977.877	-92.822	17.312	91.548	0.50607	0.47000	-1.62000	
2,226.995	6.220	174.430	2,221.259	1,071.262	-103.514	18.220	101.638	0.73160	-0.71277	-1.44681	
2,320.995	4.070	161.340	2,314.878	1,164.880	-111.743	19.782	109.766	2.59164	-2.28724	-13.92556	
2,416.995	4.000	160.850	2,410.640	1,260.642	-118.134	21.970	116.486	0.08128	-0.07292	-0.51042	
2,510.995	3.190	174.430	2,504.456	1,354.458	-123.835	23.299	122.219	1.24457	-0.86170	14.44684	
2,603.995	1.700	185.110	2,597.368	1,447.371	-127.784	23.428	125.860	1.66853	-1.60215	11.48389	
2,697.994	0.240	264.160	2,691.354	1,541.356	-129.193	23.108	127.006	1.77777	-1.55319	84.09591	
2,791.994	0.080	306.330	2,785.353	1,635.356	-129.174	22.859	126.885	0.20055	-0.17021	44.86179	
2,884.994	0.340	203.940	2,878.353	1,728.355	-129.388	22.695	127.010	0.39313	0.27957	-110.09700	
2,978.994	0.640	221.800	2,972.349	1,822.351	-130.034	22.232	127.403	0.35439	0.31915	19.00004	

# EQT

## Survey Report

Database:	EDM_Definitive	Local Co-ordinate Reference:	Well Hines M21H
Company:	EQT (Chevron Data) 02-13-21	TVD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Project:	Marshall County, WV Chevron	MD Reference:	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
Site:	Hines Pad EQT	North Reference:	True
Well:	Hines M21H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Hines M21H 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)
3,072.994	2.060	93.950	3,066.330	1,916.333	-130.542	23.567	128.423	2.66405	1.51064	-136.0109 1
3,165.994	6.090	78.030	3,159.078	2,009.081	-129.634	30.064	130.317	4.45972	4.33334	-17.11831
3,259.993	8.140	74.870	3,252.350	2,102.352	-126.862	41.367	132.530	2.21943	2.18086	-3.36171
3,355.993	10.290	75.680	3,347.105	2,197.107	-122.967	56.237	135.216	2.24361	2.23959	0.84375
3,448.993	12.610	76.090	3,438.248	2,288.250	-118.472	74.142	138.626	2.49615	2.49463	0.44086
3,542.993	16.330	76.650	3,529.250	2,379.252	-112.952	96.967	143.166	3.96021	3.95745	0.59575
3,636.993	20.630	78.660	3,618.382	2,468.385	-106.641	126.076	149.616	4.62376	4.57448	2.13830
3,729.992	24.380	75.770	3,704.287	2,554.289	-98.698	160.758	156.917	4.20290	4.03227	-3.10753
3,823.992	28.340	71.970	3,788.502	2,638.505	-87.018	200.798	163.066	4.57727	4.21277	-4.04256
3,916.992	33.090	71.660	3,868.433	2,718.436	-72.190	245.911	168.478	5.11036	5.10754	-0.33333
4,010.992	33.040	69.410	3,947.213	2,797.215	-55.103	294.258	173.193	1.30696	-0.05319	-2.39362
<b>Hines A NE2 BHL</b>										
4,104.992	32.650	70.390	4,026.186	2,876.189	-37.581	342.133	177.315	0.70132	-0.41489	1.04256
<b>Hines A NE2 AZI</b>										
4,197.991	33.280	74.620	4,104.224	2,954.226	-22.392	390.374	183.708	2.56546	0.67742	4.54840
4,291.991	36.010	74.800	4,181.549	3,031.551	-8.304	441.916	192.484	2.90630	2.90426	0.19149
4,385.991	36.590	75.320	4,257.306	3,107.308	6.041	495.684	201.958	0.69854	0.61702	0.55319
4,478.991	36.910	75.110	4,331.822	3,181.825	20.241	549.486	211.577	0.36966	0.34409	-0.22581
4,574.991	36.180	74.010	4,408.948	3,258.950	35.455	604.585	220.819	1.02162	-0.76042	-1.14584
4,668.990	34.430	73.180	4,485.657	3,335.660	50.788	656.698	228.702	1.93034	-1.86171	-0.88298
4,757.990	33.810	74.550	4,559.338	3,409.340	64.666	704.650	236.166	1.10940	-0.69663	1.53933
4,850.990	34.040	77.350	4,636.511	3,486.513	77.260	754.990	245.796	1.69831	0.24731	3.01076
4,944.990	32.740	76.070	4,714.995	3,564.997	89.141	805.334	256.074	1.57290	-1.38298	-1.36170
5,037.990	33.370	73.770	4,792.945	3,642.948	102.344	854.303	264.576	1.50939	0.67742	-2.47312
5,131.989	34.220	75.510	4,871.063	3,721.066	116.184	904.718	273.105	1.37024	0.90426	1.85107
5,225.989	35.680	76.490	4,948.109	3,798.111	129.202	956.966	283.148	1.66402	1.55319	1.04256
5,318.989	37.770	74.780	5,022.648	3,872.650	143.017	1,010.826	293.142	2.50168	2.24732	-1.83871
5,412.989	37.730	76.760	5,096.975	3,946.977	157.162	1,066.603	303.637	1.29023	-0.04255	2.10639
<b>MO6H 70°</b>										
5,449.148	37.326	76.574	5,125.651	3,975.653	162.241	1,088.035	307.994	1.16064	-1.11768	-0.51356
5,506.989	36.680	76.270	5,171.843	4,021.845	170.413	1,121.874	314.733	1.16064	-1.11661	-0.52610
5,599.989	34.100	73.550	5,247.657	4,097.660	184.392	1,173.871	323.799	3.24985	-2.77420	-2.92474
5,693.988	34.020	72.430	5,325.532	4,175.535	199.791	1,224.212	330.880	0.67271	-0.08511	-1.19149
5,787.988	33.880	73.270	5,403.508	4,253.510	215.272	1,274.373	337.813	0.52080	-0.14894	0.89362
5,880.988	33.760	74.890	5,480.773	4,330.775	229.470	1,324.145	345.748	0.97806	-0.12903	1.74194
<b>Final MWD=5975° MD/ 5559° TVD - M08H 70°</b>										
5,974.988	34.490	73.690	5,558.588	4,408.590	243.753	1,374.906	354.020	1.05638	0.77660	-1.27660
<b>Projection to Top Hole TD=6040' MD/5612' TVD - Interp @ 6253.801 (Hines M21H OH Hines M21H NE2 Te - MO7H 70° - Hines A NE2 LP</b>										
6,040.000	34.490	73.690	5,612.172	4,462.175	254.091	1,410.238	359.417	0.00000	0.00000	0.00000

# EQT

## Survey Report

<b>Database:</b>	EDM_Definitive	<b>Local Co-ordinate Reference:</b>	Well Hines M21H
<b>Company:</b>	EQT (Chevron Data) 02-13-21	<b>TVD Reference:</b>	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
<b>Project:</b>	Marshall County, WV Chevron	<b>MD Reference:</b>	GL @ 1125.00 & 25' KB @ 1149.998usft (PD572)
<b>Site:</b>	Hines Pad EQT	<b>North Reference:</b>	True
<b>Well:</b>	Hines M21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Hines M21H As Drilled		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(-224.142)	(1,932.518)	(usft)	(usft)		
- Shape									
(1) Hines M21H LP - Re	0.000	0.000	6,269.98 6	-224.142	1,932.518	514,154.823	1,634,042.704	39.9055151	80.6922453°W
- actual wellpath misses target center by 966.542usft at 6040.000usft MD (5612.173 TVD, 254.091 N, 1410.238 E)									
- Point									
(2) Hines M21H BHL - R	0.000	0.000	6,269.98 6	-13,197.64 0	7,909.538	501,102.704	1,639,846.029	39.8698959	80.6709540°W
- actual wellpath misses target center by 14954.019usft at 6040.000usft MD (5612.173 TVD, 254.091 N, 1410.238 E)									
- Point									
(1) Hines M21H LP - Re	0.000	0.000	6,269.98 6	-225.407	2,112.164	514,151.161	1,634,222.318	39.9055116	80.6916049°W
- actual wellpath misses target center by 1074.867usft at 6040.000usft MD (5612.173 TVD, 254.091 N, 1410.238 E)									
- Point									
(1) Hines M21H LP - Re	0.000	0.000	6,269.98 6	-225.407	2,101.023	514,151.309	1,634,211.178	39.9055116	80.6916446°W
- actual wellpath misses target center by 1067.625usft at 6040.000usft MD (5612.173 TVD, 254.091 N, 1410.238 E)									
- Point									
Hines M01H BHL - Rev-	0.000	0.000	6,269.98 7	7,532.235	-5,146.449	522,004.997	1,627,067.895	39.9268071	80.7174847°W
- actual wellpath misses target center by 9613.498usft at 4197.992usft MD (4104.224 TVD, -22.392 N, 390.374 E)									
- Point									
Hines M01H LP - Rev-2	0.000	0.000	6,269.98 7	1,157.519	57.375	515,561.390	1,632,186.170	39.9093083	80.6989294°W
- actual wellpath misses target center by 1754.122usft at 5974.988usft MD (5558.588 TVD, 243.753 N, 1374.906 E)									
- Point									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
430.999	430.989	1.464	1.968	Final Gyro Survey=431' MD/ TVD
1,051.000	1,050.965	4.085	3.903	Nudge KOP=1051' MD/TVD
5,974.988	5,558.588	243.753	1,374.906	Final MWD=5975' MD/ 5559' TVD
6,040.000	5,612.172	254.091	1,410.238	Projection to Top Hole TD=6040' MD/5612' TVD

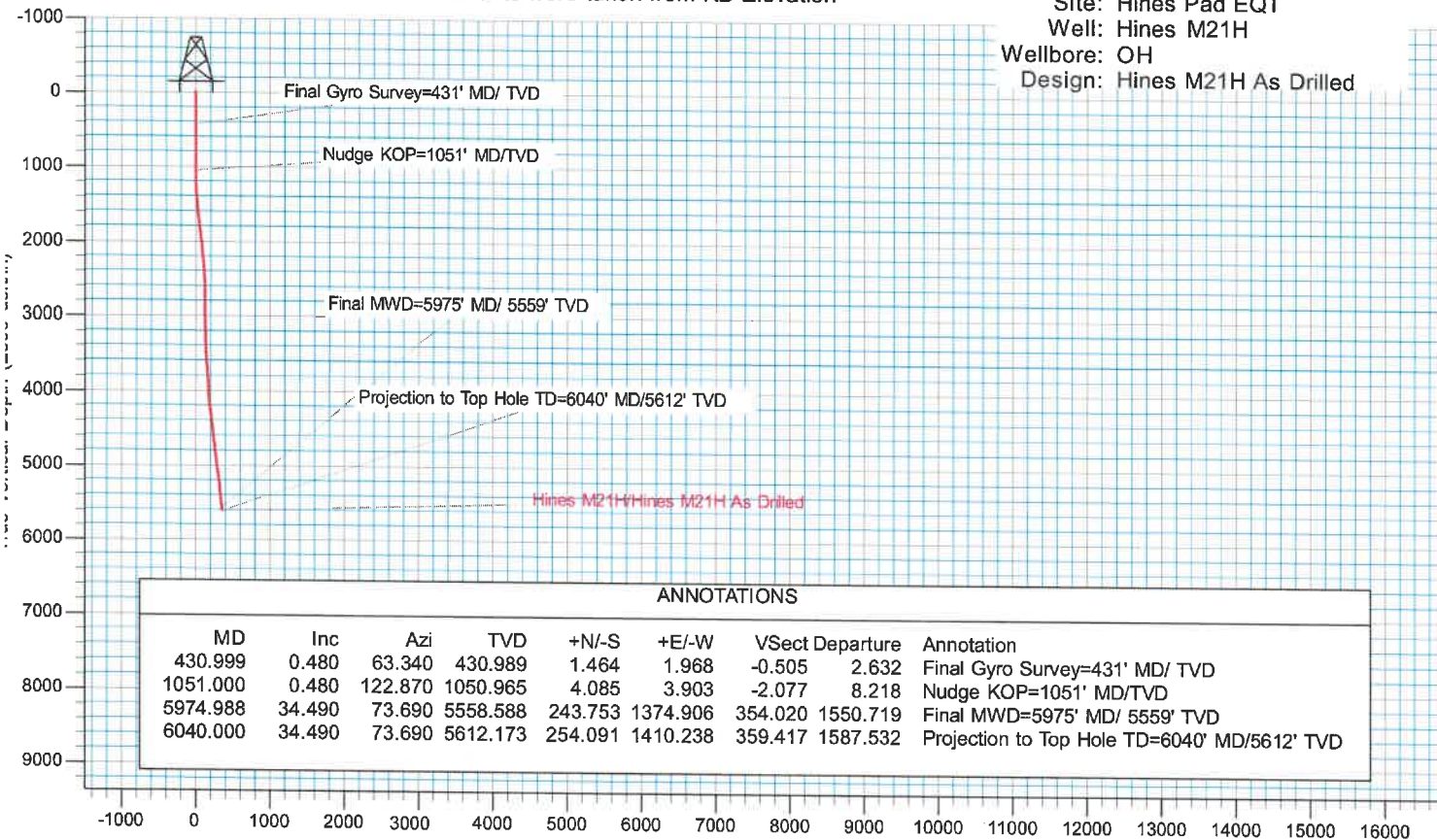
Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



# EQT (Chevron Data) 02-13-21

KB Elevation= GL @ 1125.00 & 25' KB @ 1149.99usft (PD572)  
 Ground Elevation= 1124.998  
 All measurements were taken from KB Elevation

Project: Marshall County, WV Chevron  
 Site: Hines Pad EQT  
 Well: Hines M21H  
 Wellbore: OH  
 Design: Hines M21H As Drilled



Vertical Section at 155.260° (2500 usft/in)

