

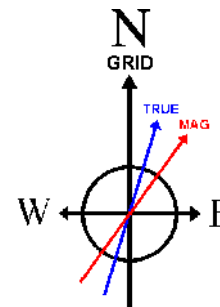
# Forge Energy

Location: Andrews County, TX  
Field: (UB) Sec 14, Blk 13  
Facility: UB 13-14 6H

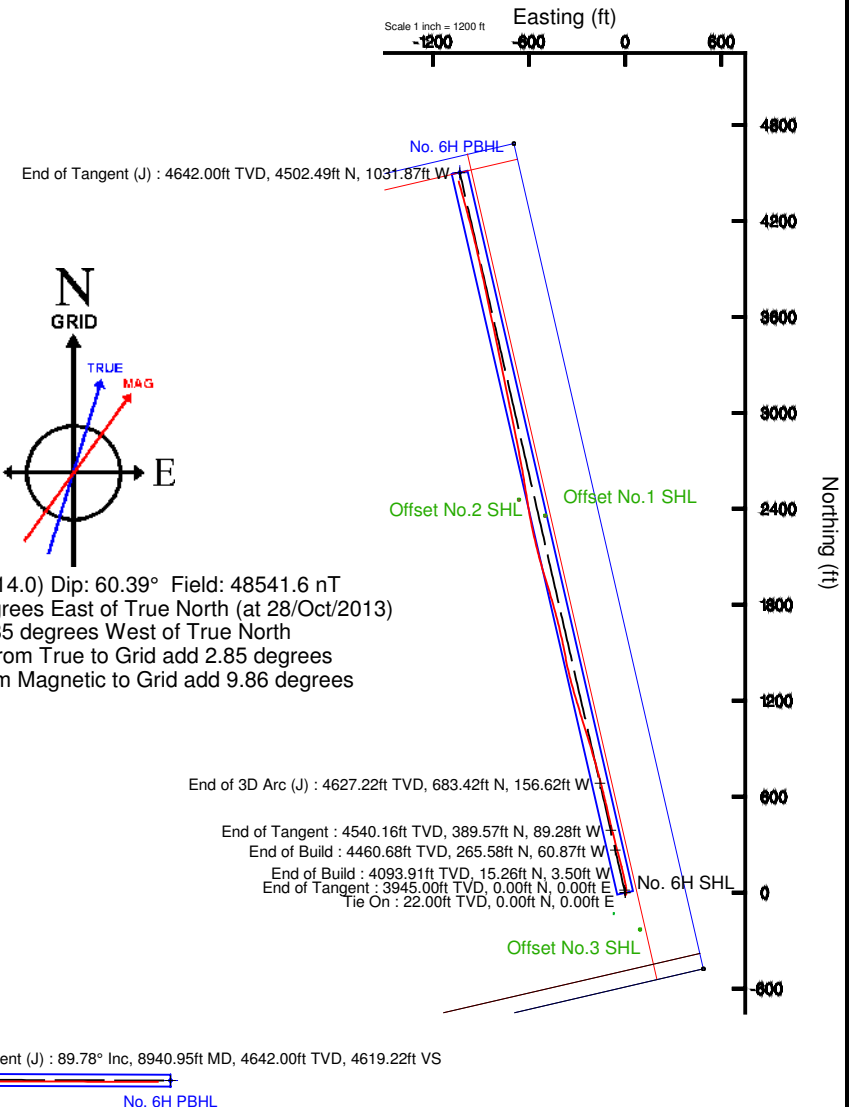
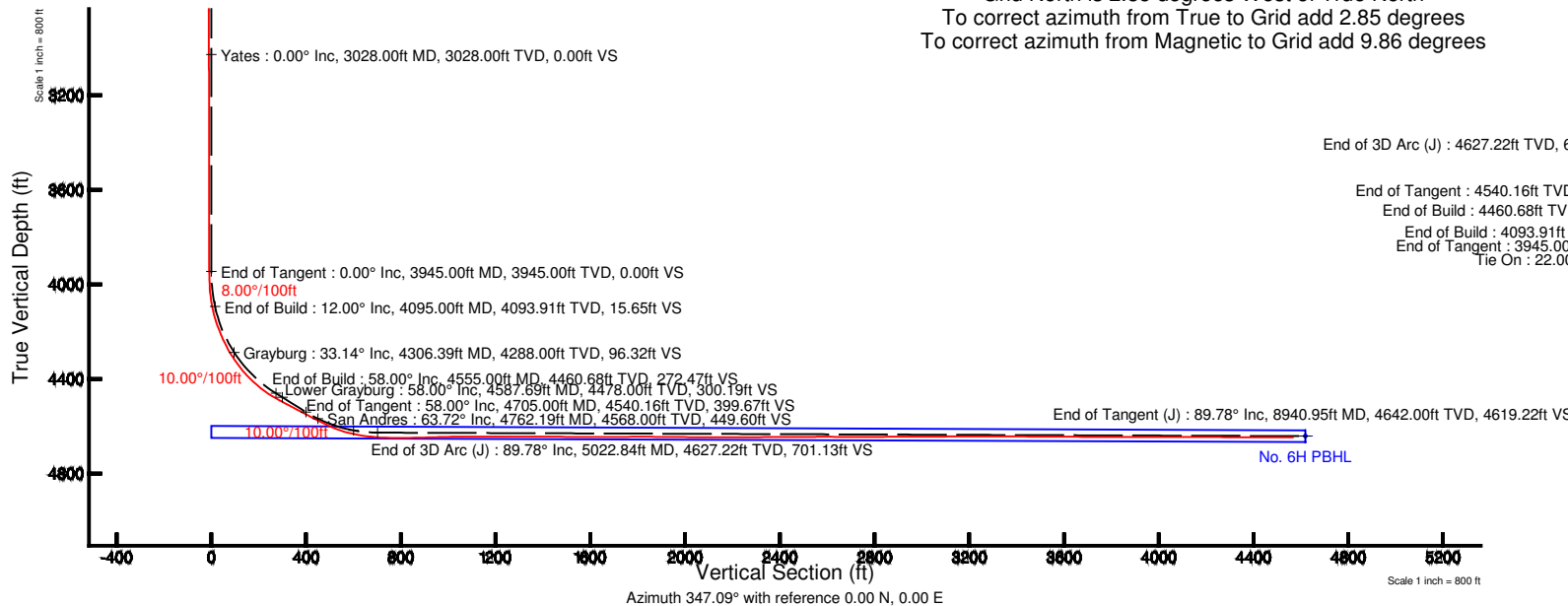
Slot: No. 6H SHL  
Well: No. 6H  
Wellbore: No. 6H PWB



Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	22.00	0.000	347.092	22.00	0.00	0.00	0.00	0.00
End of Tangent	3945.00	0.000	347.092	3945.00	0.00	0.00	0.00	0.00
End of Build	4095.00	12.000	347.092	4093.91	15.26	-3.50	8.00	15.65
End of Build	4555.00	58.000	347.092	4460.68	265.58	-60.87	10.00	272.47
End of Tangent	4705.00	58.000	347.092	4540.16	389.57	-89.28	0.00	399.67
End of 3D Arc (J)	5022.84	89.784	347.092	4627.22	683.42	-156.62	10.00	701.13
End of Tangent (J)	8940.95	89.784	347.092	4642.00	4502.49	-1031.87	0.00	4619.22
Plot reference wellpath is Rev-A.0								
True vertical depths are referenced to Rig on No. 6H SHL (KB)				Grid System: NAD27 / Lambert Texas SP, North Central Zone (4202), US feet				
Measured depths are referenced to Rig on No. 6H SHL (KB)				North Reference: Grid north				
Rig on No. 6H SHL (KB) to Mean Sea Level: 3290 feet				Scale: True distance				
Mean Sea Level to Mud line (At Slot: No. 6H SHL): 3068 feet				Depths are in feet				
Coordinates are in feet referenced to Facility Center				Created by: gblpsl on 04/Nov/2013				



BGGM (1945.0 to 2014.0) Dip: 60.39° Field: 48541.6 nT  
Magnetic North is 7.01 degrees East of True North (at 28/Oct/2013)  
Grid North is 2.85 degrees West of True North  
To correct azimuth from True to Grid add 2.85 degrees  
To correct azimuth from Magnetic to Grid add 9.86 degrees



Rev-A.0



# Actual Wellpath Report

No. 6H AWP

Page 1 of 4



## REFERENCE WELLPATH IDENTIFICATION

Operator	Forge Energy	Slot	No. 6H SHL
Area	Andrews County, TX	Well	No. 6H
Field	(UB) Sec 14, Blk 13	Wellbore	No. 6H AWB
Facility	UB 13-14 6H		

## REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert Texas SP, North Central Zone (4202), US feet	Software System	WellArchitect® 4.0.1
North Reference	Grid	User	Gentbry
Scale	0.999938	Report Generated	11/21/2013 at 10:24:03 AM
Convergence at slot	2.85° West	Database/Source file	MidlandDB/No._6H_AWB.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	385685.70	304960.90	32°23'39.845"N	102°43'55.478"W
Facility Reference Pt			385685.70	304960.90	32°23'39.845"N	102°43'55.478"W
Field Reference Pt			609601.22	0.00	31°35'07.574"N	101°57'55.159"W

## WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 6H SHL (KB) to Facility Vertical Datum	22.00ft
Horizontal Reference Pt	Facility Center	Rig on No. 6H SHL (KB) to Mean Sea Level	3290.00ft
Vertical Reference Pt	Rig on No. 6H SHL (KB)	Rig on No. 6H SHL (KB) to Mud Line at Slot (No. 6H SHL)	22.00ft
MD Reference Pt	Rig on No. 6H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	347.09°



# Actual Wellpath Report

No. 6H AWP

Page 2 of 4



## REFERENCE WELLPATH IDENTIFICATION

Operator	Forge Energy	Slot	No. 6H SHL
Area	Andrews County, TX	Well	No. 6H
Field	(UB) Sec 14, Blk 13	Wellbore	No. 6H AWB
Facility	UB 13-14 6H		

## WELLPATH DATA (103 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	321.700	0.00	0.00	0.00	0.00	385685.70	304960.90	32°23'39.845"N	102°43'55.478"W	0.00	
22.00	0.000	321.700	22.00	0.00	0.00	0.00	385685.70	304960.90	32°23'39.845"N	102°43'55.478"W	0.00	
157.00	0.400	321.700	157.00	0.43	0.37	-0.29	385685.41	304961.27	32°23'39.849"N	102°43'55.481"W	0.30	
321.70	0.620	225.510	321.69	0.48	0.20	-1.28	385684.42	304961.10	32°23'39.846"N	102°43'55.493"W	0.47	
432.00	0.620	190.220	431.99	-0.38	-0.81	-1.82	385683.88	304960.09	32°23'39.836"N	102°43'55.499"W	0.34	
554.00	0.480	194.920	553.98	-1.44	-1.95	-2.06	385683.64	304958.95	32°23'39.825"N	102°43'55.501"W	0.12	
678.00	0.700	171.100	677.98	-2.66	-3.20	-2.08	385683.62	304957.70	32°23'39.812"N	102°43'55.500"W	0.26	
766.00	0.790	166.530	765.97	-3.80	-4.32	-1.86	385683.84	304956.58	32°23'39.801"N	102°43'55.497"W	0.12	
953.00	0.790	158.530	952.95	-6.36	-6.78	-1.08	385684.62	304954.12	32°23'39.778"N	102°43'55.487"W	0.06	
1142.00	0.010	9.120	1141.95	-7.64	-7.97	-0.60	385685.10	304952.93	32°23'39.766"N	102°43'55.480"W	0.42	
1232.00	0.400	177.610	1231.94	-7.94	-8.28	-0.59	385685.11	304952.62	32°23'39.763"N	102°43'55.480"W	0.46	
1332.00	0.400	165.740	1331.94	-8.63	-8.97	-0.49	385685.21	304951.93	32°23'39.756"N	102°43'55.478"W	0.08	
1423.00	0.310	187.010	1422.94	-9.18	-9.52	-0.44	385685.26	304951.38	32°23'39.751"N	102°43'55.477"W	0.17	
1616.00	0.400	139.400	1615.94	-10.27	-10.55	-0.07	385685.63	304950.35	32°23'39.741"N	102°43'55.473"W	0.15	
1806.00	1.100	141.530	1805.92	-12.50	-12.48	1.50	385687.20	304948.42	32°23'39.722"N	102°43'55.453"W	0.37	
1913.00	0.400	12.290	1912.91	-13.09	-12.92	2.22	385687.92	304947.98	32°23'39.718"N	102°43'55.445"W	1.30	
2104.00	0.320	216.470	2103.91	-12.83	-12.70	2.04	385687.74	304948.20	32°23'39.721"N	102°43'55.447"W	0.37	
2294.00	0.410	4.290	2293.91	-12.53	-12.45	1.78	385687.48	304948.46	32°23'39.723"N	102°43'55.450"W	0.37	
2484.00	0.750	74.970	2483.90	-11.83	-11.44	3.03	385688.73	304949.46	32°23'39.733"N	102°43'55.436"W	0.38	
2675.00	0.330	18.580	2674.89	-11.32	-10.60	4.41	385690.11	304950.30	32°23'39.742"N	102°43'55.420"W	0.33	
2863.00	0.110	6.500	2862.89	-10.69	-9.91	4.61	385690.31	304950.99	32°23'39.749"N	102°43'55.418"W	0.12	
3053.00	0.400	290.980	3052.89	-10.14	-9.49	4.01	385689.71	304951.41	32°23'39.753"N	102°43'55.426"W	0.20	
3242.00	0.590	37.740	3241.89	-9.16	-8.48	3.99	385689.69	304952.42	32°23'39.763"N	102°43'55.427"W	0.42	
3432.00	0.430	141.510	3431.88	-9.18	-8.27	5.03	385690.73	304952.63	32°23'39.766"N	102°43'55.414"W	0.43	
3623.00	0.580	28.760	3622.88	-9.11	-7.98	5.94	385691.64	304952.92	32°23'39.769"N	102°43'55.404"W	0.44	
3813.00	0.290	163.400	3812.88	-8.87	-7.60	6.54	385692.24	304953.30	32°23'39.773"N	102°43'55.397"W	0.43	
3908.00	0.220	79.990	3907.88	-9.12	-7.80	6.79	385692.49	304953.10	32°23'39.771"N	102°43'55.394"W	0.36	
3971.00	1.510	13.320	3970.87	-8.38	-6.97	7.10	385692.80	304953.93	32°23'39.780"N	102°43'55.391"W	2.28	
4003.00	3.030	5.480	4002.84	-7.20	-5.72	7.28	385692.98	304955.18	32°23'39.792"N	102°43'55.390"W	4.84	
4035.00	5.400	2.210	4034.75	-4.94	-3.37	7.42	385693.12	304957.53	32°23'39.815"N	102°43'55.390"W	7.44	
4066.00	8.240	359.950	4065.53	-1.37	0.31	7.47	385693.17	304961.21	32°23'39.852"N	102°43'55.391"W	9.20	
4098.00	11.640	359.160	4097.05	4.03	5.83	7.42	385693.12	304966.73	32°23'39.906"N	102°43'55.395"W	10.63	
4129.00	15.180	357.060	4127.20	11.09	13.02	7.17	385692.87	304973.92	32°23'39.977"N	102°43'55.402"W	11.53	
4161.00	18.480	355.220	4157.82	20.24	22.26	6.53	385692.23	304983.16	32°23'40.068"N	102°43'55.415"W	10.44	
4192.00	20.350	353.560	4187.06	30.46	32.51	5.51	385691.21	304993.41	32°23'40.169"N	102°43'55.433"W	6.29	
4224.00	22.840	351.740	4216.81	42.18	44.19	4.00	385689.70	305005.08	32°23'40.284"N	102°43'55.457"W	8.06	
4256.00	26.090	349.470	4245.93	55.40	57.25	1.82	385687.52	305018.15	32°23'40.412"N	102°43'55.490"W	10.57	
4287.00	29.140	348.020	4273.40	69.76	71.34	-0.99	385684.71	305032.24	32°23'40.550"N	102°43'55.531"W	10.07	
4319.00	32.190	347.670	4300.92	86.08	87.30	-4.43	385681.27	305048.19	32°23'40.706"N	102°43'55.580"W	9.55	
4351.00	35.210	346.920	4327.54	103.83	104.61	-8.34	385677.36	305065.51	32°23'40.875"N	102°43'55.636"W	9.53	
4382.00	37.910	346.500	4352.44	122.30	122.58	-12.59	385673.11	305083.47	32°23'41.050"N	102°43'55.696"W	8.75	
4413.00	41.460	346.090	4376.29	142.09	141.81	-17.28	385668.42	305102.70	32°23'41.238"N	102°43'55.761"W	11.48	
4443.00	44.960	345.860	4398.15	162.62	161.73	-22.26	385663.44	305122.62	32°23'41.432"N	102°43'55.831"W	11.68	
4473.00	48.280	345.410	4418.75	184.41	182.85	-27.67	385658.03	305143.74	32°23'41.639"N	102°43'55.906"W	11.12	
4504.00	51.660	344.970	4438.69	208.13	205.80	-33.74	385651.96	305166.68	32°23'41.862"N	102°43'55.990"W	10.96	



# Actual Wellpath Report

No. 6H AWP

Page 3 of 4



## REFERENCE WELLPATH IDENTIFICATION

Operator	Forge Energy	Slot	No. 6H SHL
Area	Andrews County, TX	Well	No. 6H
Field	(UB) Sec 14, Blk 13	Wellbore	No. 6H AWB
Facility	UB 13-14 6H		

## WELLPATH DATA (103 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4534.00	54.980	344.970	4456.61	232.17	229.03	-39.98	385645.73	305189.92	32°23'42.089"N	102°43'56.076"W	11.07	
4565.00	58.670	345.270	4473.57	258.10	254.10	-46.64	385639.07	305214.99	32°23'42.333"N	102°43'56.169"W	11.93	
4595.00	61.560	345.450	4488.51	284.10	279.27	-53.21	385632.49	305240.15	32°23'42.579"N	102°43'56.260"W	9.65	
4610.00	62.480	345.620	4495.55	297.34	292.09	-56.52	385629.19	305252.98	32°23'42.704"N	102°43'56.306"W	6.21	
4640.00	62.130	345.898	4509.50	323.89	317.84	-63.05	385622.65	305278.72	32°23'42.955"N	102°43'56.397"W	1.43	
4671.00	62.190	346.110	4523.97	351.30	344.44	-69.68	385616.02	305305.32	32°23'43.215"N	102°43'56.489"W	0.63	
4700.00	62.150	346.240	4537.51	376.94	369.34	-75.81	385609.89	305330.22	32°23'43.458"N	102°43'56.575"W	0.42	
4731.00	62.200	346.300	4551.98	404.36	395.97	-82.32	385603.39	305356.85	32°23'43.718"N	102°43'56.667"W	0.24	
4762.00	62.270	346.490	4566.42	431.79	422.64	-88.77	385596.94	305383.51	32°23'43.978"N	102°43'56.757"W	0.59	
4778.00	62.500	346.600	4573.84	445.96	436.42	-92.07	385593.64	305397.30	32°23'44.113"N	102°43'56.804"W	1.56	
4838.00	65.860	347.040	4599.97	499.96	489.00	-104.38	385581.33	305449.87	32°23'44.626"N	102°43'56.978"W	5.64	
4883.00	70.990	347.200	4616.51	541.80	529.78	-113.70	385572.00	305490.65	32°23'45.025"N	102°43'57.110"W	11.40	
4930.00	76.120	346.820	4629.81	586.86	573.69	-123.83	385561.87	305534.56	32°23'45.454"N	102°43'57.253"W	10.94	
4975.00	80.530	346.110	4638.91	630.91	616.53	-134.15	385551.56	305577.39	32°23'45.872"N	102°43'57.398"W	9.92	
5021.00	84.720	345.550	4644.82	676.51	660.75	-145.31	385540.40	305621.61	32°23'46.304"N	102°43'57.554"W	9.19	
5066.00	87.200	345.240	4647.99	721.38	704.18	-156.63	385529.08	305665.04	32°23'46.727"N	102°43'57.711"W	5.55	
5112.00	89.320	345.070	4649.38	767.33	748.62	-168.41	385517.30	305709.48	32°23'47.161"N	102°43'57.874"W	4.62	
5204.00	91.420	343.620	4648.79	859.21	837.20	-193.23	385492.48	305798.05	32°23'48.024"N	102°43'58.215"W	2.77	
5296.00	91.510	343.500	4646.44	951.01	925.41	-219.26	385466.45	305886.25	32°23'48.883"N	102°43'58.569"W	0.16	
5388.00	90.800	342.650	4644.58	1042.76	1013.41	-246.04	385439.68	305974.24	32°23'49.739"N	102°43'58.932"W	1.20	
5480.00	89.880	342.820	4644.04	1134.49	1101.26	-273.34	385412.37	306062.09	32°23'50.594"N	102°43'59.301"W	1.02	
5572.00	90.090	342.950	4644.06	1226.24	1189.19	-300.42	385385.30	306150.01	32°23'51.450"N	102°43'59.668"W	0.27	
5662.00	89.600	344.570	4644.31	1316.09	1275.59	-325.59	385360.13	306236.41	32°23'52.291"N	102°44'00.011"W	1.88	
5757.00	89.970	346.210	4644.66	1411.04	1367.51	-349.55	385336.17	306328.33	32°23'53.188"N	102°44'00.343"W	1.77	
5852.00	89.290	349.270	4645.28	1506.02	1460.33	-369.72	385316.01	306421.14	32°23'54.095"N	102°44'00.632"W	3.30	
5947.00	89.690	348.450	4646.12	1600.97	1553.54	-388.07	385297.65	306514.34	32°23'55.007"N	102°44'00.900"W	0.96	
6041.00	90.860	346.500	4645.67	1694.96	1645.30	-408.46	385277.27	306606.09	32°23'55.904"N	102°44'01.191"W	2.42	
6137.00	90.060	344.910	4644.90	1790.93	1738.32	-432.16	385253.57	306699.11	32°23'56.812"N	102°44'01.521"W	1.85	
6232.00	89.660	344.200	4645.13	1885.83	1829.89	-457.46	385228.27	306790.67	32°23'57.704"N	102°44'01.869"W	0.86	
6327.00	89.320	342.920	4645.98	1980.65	1921.00	-484.34	385201.39	306881.77	32°23'58.591"N	102°44'02.235"W	1.39	
6421.00	89.350	343.320	4647.07	2074.42	2010.94	-511.63	385174.10	306971.71	32°23'59.467"N	102°44'02.605"W	0.43	
6517.00	90.340	345.270	4647.33	2170.29	2103.35	-537.62	385148.12	307064.11	32°24'00.367"N	102°44'02.962"W	2.28	
6612.00	90.310	346.660	4646.79	2265.27	2195.51	-560.66	385125.08	307156.27	32°24'01.267"N	102°44'03.283"W	1.46	
6707.00	90.490	348.200	4646.13	2360.27	2288.23	-581.33	385104.41	307248.98	32°24'02.173"N	102°44'03.578"W	1.63	
6802.00	90.340	350.480	4645.44	2455.18	2381.58	-598.90	385086.84	307342.33	32°24'03.087"N	102°44'03.837"W	2.41	
6897.00	90.180	350.920	4645.01	2549.99	2475.33	-614.25	385071.48	307436.07	32°24'04.006"N	102°44'04.070"W	0.49	
6991.00	89.780	350.700	4645.04	2643.80	2568.12	-629.27	385056.47	307528.86	32°24'04.916"N	102°44'04.299"W	0.49	
7087.00	89.940	349.880	4645.27	2739.65	2662.75	-645.46	385040.28	307623.48	32°24'05.843"N	102°44'04.543"W	0.87	
7181.00	90.340	348.730	4645.04	2833.57	2755.11	-662.90	385022.84	307715.83	32°24'06.747"N	102°44'04.800"W	1.30	
7276.00	90.280	348.610	4644.53	2928.54	2848.26	-681.57	385004.18	307808.98	32°24'07.658"N	102°44'05.071"W	0.14	
7371.00	90.220	348.730	4644.12	3023.50	2941.41	-700.23	384985.52	307902.12	32°24'08.570"N	102°44'05.343"W	0.14	
7466.00	90.460	348.120	4643.55	3118.47	3034.47	-719.29	384966.46	307995.18	32°24'09.480"N	102°44'05.619"W	0.69	
7561.00	89.630	348.660	4643.48	3213.45	3127.53	-738.41	384947.34	308088.23	32°24'10.390"N	102°44'05.895"W	1.04	
7655.00	90.490	348.660	4643.38	3307.41	3219.69	-756.89	384928.86	308180.39	32°24'11.292"N	102°44'06.164"W	0.91	
7751.00	89.540	348.580	4643.35	3403.37	3313.80	-775.83	384909.92	308274.49	32°24'12.213"N	102°44'06.440"W	0.99	



# Actual Wellpath Report

No. 6H AWP

Page 4 of 4



## REFERENCE WELLPATH IDENTIFICATION

Operator	Forge Energy	Slot	No. 6H SHL
Area	Andrews County, TX	Well	No. 6H
Field	(UB) Sec 14, Blk 13	Wellbore	No. 6H AWB
Facility	UB 13-14 6H		

## WELLPATH DATA (103 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7845.00	89.780	348.630	4643.91	3497.34	3405.95	-794.41	384891.35	308366.63	32°24'13.114"N	102°44'06.710"W	0.26	
7940.00	89.480	348.110	4644.53	3592.31	3499.00	-813.56	384872.20	308459.67	32°24'14.024"N	102°44'06.987"W	0.63	
8035.00	89.820	347.090	4645.11	3687.31	3591.78	-833.96	384851.80	308552.45	32°24'14.931"N	102°44'07.278"W	1.13	
8130.00	89.880	348.290	4645.35	3782.30	3684.59	-854.21	384831.55	308645.25	32°24'15.839"N	102°44'07.568"W	1.26	
8224.00	90.090	348.500	4645.38	3876.27	3776.67	-873.12	384812.64	308737.33	32°24'16.739"N	102°44'07.842"W	0.32	
8320.00	89.660	347.880	4645.59	3972.26	3870.64	-892.77	384792.99	308831.29	32°24'17.658"N	102°44'08.125"W	0.79	
8415.00	90.520	347.250	4645.44	4067.25	3963.41	-913.22	384772.54	308924.05	32°24'18.565"N	102°44'08.418"W	1.12	
8510.00	89.630	347.150	4645.31	4162.25	4056.04	-934.27	384751.49	309016.68	32°24'19.470"N	102°44'08.717"W	0.94	
8605.00	89.350	345.270	4646.16	4257.23	4148.30	-956.91	384728.85	309108.93	32°24'20.371"N	102°44'09.034"W	2.00	
8700.00	89.410	344.690	4647.19	4352.16	4240.05	-981.53	384704.23	309200.67	32°24'21.265"N	102°44'09.374"W	0.61	
8794.00	90.250	344.430	4647.47	4446.07	4330.65	-1006.56	384679.21	309291.27	32°24'22.148"N	102°44'09.718"W	0.94	
8889.00	90.590	344.810	4646.77	4540.98	4422.25	-1031.75	384654.02	309382.86	32°24'23.041"N	102°44'10.065"W	0.54	
8914.00	90.590	344.810	4646.51	4565.95	4446.37	-1038.30	384647.47	309406.99	32°24'23.276"N	102°44'10.155"W	0.00	Proj to Bit

## TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No. 6H PBHL		4642.00	4502.49	-1031.87	384653.90	309463.10	32°24'23.834"N	102°44'10.113"W	rectangle

## WELLPATH COMPOSITION - Ref Wellbore: No. 6H AWB Ref Wellpath: No. 6H AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
22.00	1806.00	ISCWSA MWD, Rev. 2 (Standard)	Unknown MWD <157-1806>	No. 6H AWB
1806.00	8889.00	AT Curve (Short Spaced)	BHI MWD AT-Curve <1913-XXXX>	No. 6H AWB
8889.00	8914.00	Blind Drilling (std)	Projection to bit	No. 6H AWB