



Actual Wellpath Report

No. 3421H AWP <60'-9380'> TD Proj: 9432' MD
Page 1 of 8



REFERENCE WELLPATH IDENTIFICATION

Operator	Forge Energy	Slot	H&P 348
Area	Andrews County, TX	Well	No. 3421H
Field	Andrews County, TX (NAD 83 / Grid)	Wellbore	No. 3421H AWB
Facility	(UL 14 Conway) Sec 21, Blk 14 ULS		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Texas SP, North Central Zone (4202), US feet	Software System	WellArchitect® 4.0.1
North Reference	Grid	User	Alvayes
Scale	0.999934	Report Generated	28/Apr/2015 at 21:40
Convergence at slot	2.30° West	Database/Source file	WA_Midland/No._3421H_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	669893.10	6859660.50	32°24'51.217"N	102°42'33.358"W
Facility Reference Pt			669893.10	6859660.50	32°24'51.217"N	102°42'33.358"W
Field Reference Pt			689614.12	6817287.63	32°18'00.000"N	102°38'24.000"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on H&P 348 (RT) to Facility Vertical Datum	19.00ft
Horizontal Reference Pt	Slot	Rig on H&P 348 (RT) to Mean Sea Level	3270.20ft
Vertical Reference Pt	Rig on H&P 348 (RT)	Rig on H&P 348 (RT) to Mud Line at Slot (H&P 348)	19.00ft
MD Reference Pt	Rig on H&P 348 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	346.54°



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Page 2 of 8



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WELLPATH DATA (149 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00	0.000	6.760	0.00	0.00	0.00	0.00	669893.10	6859660.50	32°24'51.217"N	102°42'33.358"W	0.00	0.000	0.00	6.76	0.00	0.00	
60.00	0.220	6.760	60.00	0.11	0.11	0.01	669893.11	6859660.61	32°24'51.218"N	102°42'33.358"W	0.12	6.760	0.37	-52.99	0.37	0.00	
65.00	0.400	339.820	65.00	0.13	0.14	0.01	669893.11	6859660.64	32°24'51.218"N	102°42'33.358"W	0.14	3.535	4.54	174.75	3.60	-538.80	
98.00	0.090	358.580	98.00	0.27	0.27	-0.03	669893.07	6859660.77	32°24'51.219"N	102°42'33.359"W	0.28	353.406	0.96	0.00	-0.94	56.85	
129.00	0.400	358.580	129.00	0.40	0.41	-0.03	669893.07	6859660.91	32°24'51.221"N	102°42'33.359"W	0.41	355.084	1.00	-165.34	1.00	0.00	
156.00	0.310	212.290	156.00	0.45	0.44	-0.08	669893.02	6859660.94	32°24'51.221"N	102°42'33.359"W	0.45	350.141	2.52	37.14	-0.33	-541.81	
184.00	0.480	226.480	184.00	0.33	0.29	-0.20	669892.90	6859660.79	32°24'51.220"N	102°42'33.361"W	0.36	325.574	0.70	59.80	0.61	50.68	
215.00	0.620	244.280	215.00	0.23	0.13	-0.45	669892.65	6859660.63	32°24'51.218"N	102°42'33.363"W	0.47	286.486	0.71	-41.09	0.45	57.42	
246.00	0.700	238.790	245.99	0.14	-0.04	-0.76	669892.34	6859660.46	32°24'51.216"N	102°42'33.367"W	0.76	267.094	0.33	-90.64	0.26	-17.71	
276.00	0.700	237.510	275.99	0.02	-0.23	-1.07	669892.03	6859660.27	32°24'51.214"N	102°42'33.371"W	1.10	257.784	0.05	0.00	0.00	-4.27	
307.00	0.790	237.510	306.99	-0.11	-0.45	-1.41	669891.69	6859660.05	32°24'51.212"N	102°42'33.374"W	1.48	252.373	0.29	91.74	0.29	0.00	
337.00	0.790	240.980	336.99	-0.23	-0.66	-1.77	669891.33	6859659.84	32°24'51.209"N	102°42'33.378"W	1.89	249.519	0.16	90.42	0.00	11.57	
369.00	0.790	241.820	368.98	-0.35	-0.87	-2.15	669890.95	6859659.63	32°24'51.207"N	102°42'33.383"W	2.32	247.982	0.04	165.67	0.00	2.63	
399.00	0.700	243.710	398.98	-0.44	-1.05	-2.50	669890.60	6859659.45	32°24'51.205"N	102°42'33.387"W	2.71	247.225	0.31	-62.59	-0.30	6.30	
430.00	0.790	232.990	429.98	-0.57	-1.26	-2.84	669890.26	6859659.24	32°24'51.203"N	102°42'33.391"W	3.11	246.042	0.53	-90.15	0.29	-34.58	
460.00	0.790	232.690	459.98	-0.73	-1.51	-3.17	669889.93	6859658.99	32°24'51.201"N	102°42'33.394"W	3.51	244.501	0.01	8.84	0.00	-1.00	
491.00	0.880	233.600	490.97	-0.91	-1.78	-3.53	669889.57	6859658.72	32°24'51.198"N	102°42'33.398"W	3.96	243.216	0.29	-91.25	0.29	2.94	
522.00	0.880	231.100	521.97	-1.11	-2.07	-3.91	669889.19	6859658.43	32°24'51.195"N	102°42'33.403"W	4.43	242.054	0.12	-6.81	0.00	-8.06	
552.00	1.010	230.220	551.96	-1.32	-2.39	-4.29	669888.81	6859658.11	32°24'51.191"N	102°42'33.407"W	4.91	240.911	0.44	-2.69	0.43	-2.93	
583.00	1.100	230.000	582.96	-1.58	-2.75	-4.73	669888.37	6859657.75	32°24'51.188"N	102°42'33.412"W	5.47	239.790	0.29	1.19	0.29	-0.71	
613.00	1.190	230.090	612.95	-1.85	-3.14	-5.19	669887.91	6859657.36	32°24'51.184"N	102°42'33.417"W	6.06	238.832	0.30	-11.48	0.30	0.30	
644.00	1.410	228.280	643.95	-2.17	-3.60	-5.72	669887.38	6859656.90	32°24'51.179"N	102°42'33.423"W	6.76	237.825	0.72	90.75	0.71	-5.84	
674.00	1.410	229.780	673.94	-2.51	-4.08	-6.28	669886.82	6859656.42	32°24'51.174"N	102°42'33.429"W	7.49	236.962	0.12	-10.95	0.00	5.00	
705.00	1.580	228.590	704.93	-2.88	-4.61	-6.89	669886.21	6859655.89	32°24'51.168"N	102°42'33.436"W	8.29	236.202	0.56	-2.24	0.55	-3.84	
736.00	1.710	228.420	735.91	-3.30	-5.20	-7.56	669885.54	6859655.30	32°24'51.162"N	102°42'33.444"W	9.17	235.457	0.42	0.00	0.42	-0.55	
766.00	1.710	228.420	765.90	-3.72	-5.80	-8.23	669884.87	6859654.70	32°24'51.156"N	102°42'33.451"W	10.06	234.833	0.00	-39.58	0.00	0.00	
797.00	1.800	226.090	796.89	-4.19	-6.44	-8.92	669884.18	6859654.06	32°24'51.150"N	102°42'33.459"W	11.00	234.178	0.37	2.02	0.29	-7.52	
827.00	2.020	226.310	826.87	-4.69	-7.13	-9.64	669883.46	6859653.37	32°24'51.142"N	102°42'33.467"W	12.00	233.516	0.73	35.25	0.73	0.73	
872.00	2.110	228.020	871.84	-5.49	-8.23	-10.83	669882.27	6859652.27	32°24'51.131"N	102°42'33.481"W	13.61	232.763	0.24	-2.80	0.20	3.80	
917.00	2.290	227.800	916.81	-6.32	-9.39	-12.12	669880.99	6859651.11	32°24'51.119"N	102°42'33.495"W	15.33	232.216	0.40	-90.40	0.40	-0.49	



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Page 3 of 8



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Field	Andrews County, TX (NAD 83 / Grid)	Wellbore	No. 3421H AWB
Facility	(UL 14 Conway) Sec 21, Blk 14 ULS		

WELLPATH DATA (149 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
962.00	2.290	227.010	961.77	-7.19	-10.61	-13.44	669879.66	6859649.89	32°24'51.106"N	102°42'33.510"W	17.12	231.712	0.07	90.09	0.00	-1.76	
1007.00	2.290	227.190	1006.73	-8.07	-11.83	-14.76	669878.34	6859648.67	32°24'51.094"N	102°42'33.525"W	18.92	231.274	0.02	-2.14	0.00	0.40	
1052.00	2.500	227.010	1051.70	-9.00	-13.11	-16.13	669876.97	6859647.39	32°24'51.081"N	102°42'33.540"W	20.79	230.896	0.47	35.53	0.47	-0.40	
1097.00	2.590	228.420	1096.65	-9.96	-14.46	-17.61	669875.49	6859646.04	32°24'51.067"N	102°42'33.557"W	22.79	230.619	0.24	0.00	0.20	3.13	
1143.00	2.900	228.420	1142.60	-11.00	-15.92	-19.26	669873.84	6859644.58	32°24'51.052"N	102°42'33.575"W	24.99	230.425	0.67	15.13	0.67	0.00	
1188.00	3.120	229.510	1187.54	-12.09	-17.47	-21.04	669872.06	6859643.03	32°24'51.036"N	102°42'33.595"W	27.35	230.300	0.51	5.18	0.49	2.42	
1233.00	3.380	229.910	1232.46	-13.25	-19.12	-22.99	669870.11	6859641.38	32°24'51.019"N	102°42'33.617"W	29.90	230.251	0.58	-3.59	0.58	0.89	
1278.00	3.600	229.690	1277.38	-14.48	-20.89	-25.08	669868.02	6859639.61	32°24'51.000"N	102°42'33.641"W	32.64	230.213	0.49	11.46	0.49	-0.49	
1323.00	3.910	230.610	1322.28	-15.79	-22.78	-27.34	669865.76	6859637.73	32°24'50.981"N	102°42'33.666"W	35.59	230.209	0.70	155.20	0.69	2.04	
1368.00	3.690	232.200	1367.18	-17.06	-24.64	-29.67	669863.43	6859635.87	32°24'50.961"N	102°42'33.693"W	38.57	230.300	0.54	151.88	-0.49	3.53	
1413.00	3.520	233.690	1412.10	-18.19	-26.34	-31.93	669861.17	6859634.16	32°24'50.944"N	102°42'33.718"W	41.40	230.479	0.43	90.20	-0.38	3.31	
1458.00	3.520	234.090	1457.01	-19.25	-27.97	-34.16	669858.94	6859632.53	32°24'50.927"N	102°42'33.743"W	44.15	230.692	0.05	125.92	0.00	0.89	
1503.00	3.380	237.510	1501.93	-20.21	-29.49	-36.40	669856.70	6859631.01	32°24'50.911"N	102°42'33.769"W	46.85	230.985	0.55	176.12	-0.31	7.60	
1549.00	2.810	238.300	1547.86	-21.01	-30.81	-38.50	669854.60	6859629.69	32°24'50.897"N	102°42'33.793"W	49.32	231.331	1.24	-176.47	-1.24	1.72	
1594.00	2.590	238.000	1592.81	-21.68	-31.93	-40.31	669852.80	6859628.57	32°24'50.885"N	102°42'33.813"W	51.42	231.612	0.49	90.85	-0.49	-0.67	
1639.00	2.590	239.710	1637.77	-22.29	-32.98	-42.05	669851.06	6859627.52	32°24'50.874"N	102°42'33.833"W	53.44	231.887	0.17	9.15	0.00	3.80	
1684.00	2.680	240.020	1682.72	-22.89	-34.02	-43.84	669849.27	6859626.48	32°24'50.863"N	102°42'33.853"W	55.49	232.183	0.20	32.44	0.20	0.69	
1729.00	2.810	241.690	1727.67	-23.47	-35.07	-45.72	669847.39	6859625.43	32°24'50.852"N	102°42'33.875"W	57.62	232.507	0.34	-164.17	0.29	3.71	
1774.00	2.680	240.900	1772.61	-24.04	-36.11	-47.61	669845.50	6859624.40	32°24'50.841"N	102°42'33.896"W	59.75	232.823	0.30	-149.30	-0.29	-1.76	
1819.00	2.590	239.710	1817.57	-24.61	-37.13	-49.41	669843.70	6859623.37	32°24'50.830"N	102°42'33.917"W	61.80	233.073	0.23	180.00	-0.20	-2.64	Tie On
1887.00	1.010	239.710	1885.53	-25.23	-38.21	-51.25	669841.85	6859622.29	32°24'50.819"N	102°42'33.938"W	63.92	233.294	2.32	-176.08	-2.32	0.00	
2067.00	0.120	208.460	2065.52	-25.83	-39.17	-52.71	669840.39	6859621.33	32°24'50.809"N	102°42'33.954"W	65.67	233.380	0.51	-103.88	-0.49	-17.36	
2248.00	0.140	160.900	2246.52	-26.19	-39.55	-52.73	669840.38	6859620.95	32°24'50.805"N	102°42'33.954"W	65.91	233.127	0.06	-138.21	0.01	-26.28	
2428.00	0.110	80.690	2426.52	-26.43	-39.73	-52.48	669840.62	6859620.77	32°24'50.803"N	102°42'33.951"W	65.83	232.875	0.09	131.59	-0.02	-44.56	
2609.00	0.110	163.870	2607.52	-26.61	-39.87	-52.26	669840.84	6859620.63	32°24'50.802"N	102°42'33.949"W	65.73	232.663	0.08	-140.88	0.00	45.96	
2790.00	0.200	43.290	2788.52	-26.61	-39.81	-52.00	669841.10	6859620.70	32°24'50.803"N	102°42'33.946"W	65.49	232.567	0.15	140.55	0.05	-66.62	
2970.00	0.140	69.040	2968.52	-26.41	-39.50	-51.58	669841.52	6859621.00	32°24'50.806"N	102°42'33.941"W	64.97	232.556	0.05	-179.00	-0.03	14.31	
3151.00	0.060	67.710	3149.52	-26.37	-39.38	-51.28	669841.82	6859621.12	32°24'50.807"N	102°42'33.938"W	64.66	232.479	0.04	-45.72	-0.04	-0.73	
3332.00	0.220	33.250	3330.52	-26.11	-39.06	-51.01	669842.10	6859621.45	32°24'50.810"N	102°42'33.934"W	64.24	232.559	0.10	171.47	0.09	-19.04	
3513.00	0.040	150.060	3511.52	-25.94	-38.82	-50.78	669842.32	6859621.68	32°24'50.813"N	102°42'33.932"W	63.92	232.605	0.13	-122.27	-0.10	64.54	



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Page 4 of 8



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3694.00	0.090	49.860	3692.52	-25.93	-38.78	-50.64	669842.46	6859621.72	32°24'50.813"N	102°42'33.930"W	63.79	232.555	0.06	164.87	0.03	-55.36	
3874.00	0.200	207.980	3872.52	-26.11	-38.97	-50.68	669842.42	6859621.53	32°24'50.811"N	102°42'33.931"W	63.93	232.444	0.16	-158.24	0.06	87.84	
4010.00	0.110	92.110	4008.52	-26.32	-39.18	-50.66	669842.44	6859621.32	32°24'50.809"N	102°42'33.930"W	64.05	232.282	0.20	-116.25	-0.07	-85.20	
4040.00	1.160	340.740	4038.51	-26.02	-38.90	-50.74	669842.37	6859621.60	32°24'50.812"N	102°42'33.931"W	63.93	232.523	4.01	6.44	3.50	-371.23	
4070.00	3.370	344.970	4068.49	-24.84	-37.76	-51.06	669842.04	6859622.74	32°24'50.823"N	102°42'33.936"W	63.51	233.519	7.38	0.62	7.37	14.10	
4100.00	5.980	345.240	4098.39	-22.40	-35.40	-51.69	669841.41	6859625.11	32°24'50.846"N	102°42'33.944"W	62.65	235.598	8.70	-0.53	8.70	0.90	
4130.00	7.540	345.130	4128.18	-18.87	-31.98	-52.60	669840.51	6859628.52	32°24'50.880"N	102°42'33.956"W	61.56	238.696	5.20	6.22	5.20	-0.37	
4160.00	10.770	347.010	4157.79	-14.09	-27.35	-53.73	669839.37	6859633.15	32°24'50.925"N	102°42'33.972"W	60.29	243.024	10.81	-5.33	10.77	6.27	
4190.00	12.300	346.340	4187.19	-8.10	-21.51	-55.12	669837.99	6859638.99	32°24'50.982"N	102°42'33.991"W	59.16	248.679	5.12	-5.90	5.10	-2.23	
4220.00	14.200	345.540	4216.39	-1.22	-14.84	-56.79	669836.31	6859645.66	32°24'51.047"N	102°42'34.013"W	58.70	255.352	6.36	3.00	6.33	-2.67	
4250.00	17.330	346.090	4245.25	6.93	-6.94	-58.78	669834.32	6859653.56	32°24'51.125"N	102°42'34.040"W	59.19	263.266	10.45	11.33	10.43	1.83	
4281.00	20.020	347.660	4274.62	16.85	2.73	-61.03	669832.08	6859663.23	32°24'51.219"N	102°42'34.071"W	61.09	272.558	8.83	12.39	8.68	5.06	
4311.00	22.980	349.320	4302.53	27.84	13.50	-63.21	669829.89	6859674.00	32°24'51.325"N	102°42'34.101"W	64.64	282.056	10.07	9.04	9.87	5.53	
4341.00	26.050	350.430	4329.82	40.26	25.75	-65.39	669827.71	6859686.25	32°24'51.445"N	102°42'34.132"W	70.28	291.497	10.35	-3.30	10.23	3.70	
4371.00	28.540	350.130	4356.48	53.99	39.31	-67.72	669825.39	6859699.81	32°24'51.579"N	102°42'34.166"W	78.30	300.137	8.31	-0.94	8.30	-1.00	
4401.00	31.410	350.040	4382.46	68.95	54.08	-70.30	669822.81	6859714.57	32°24'51.723"N	102°42'34.203"W	88.69	307.569	9.57	1.15	9.57	-0.30	
4431.00	34.830	350.160	4407.58	85.31	70.22	-73.11	669819.99	6859730.72	32°24'51.882"N	102°42'34.243"W	101.37	313.844	11.40	-1.37	11.40	0.40	
4462.00	38.480	350.020	4432.45	103.77	88.45	-76.30	669816.81	6859748.94	32°24'52.061"N	102°42'34.289"W	116.81	319.218	11.78	5.64	11.77	-0.45	
4492.00	42.010	350.540	4455.35	123.11	107.55	-79.57	669813.54	6859768.04	32°24'52.249"N	102°42'34.336"W	133.78	323.505	11.82	2.77	11.77	1.73	
4521.00	45.090	350.750	4476.36	143.04	127.26	-82.81	669810.29	6859787.75	32°24'52.442"N	102°42'34.383"W	151.83	326.946	10.63	6.87	10.62	0.72	
4552.00	48.780	351.340	4497.53	165.61	149.63	-86.33	669806.77	6859810.12	32°24'52.662"N	102°42'34.434"W	172.75	330.015	11.98	14.05	11.90	1.90	
4582.00	52.130	352.400	4516.62	188.64	172.53	-89.60	669803.51	6859833.02	32°24'52.887"N	102°42'34.483"W	194.41	332.555	11.49	14.75	11.17	3.53	
4612.00	54.260	353.090	4534.60	212.52	196.35	-92.63	669800.47	6859856.84	32°24'53.121"N	102°42'34.530"W	217.11	334.744	7.33	1.71	7.10	2.30	
4642.00	57.070	353.190	4551.51	237.13	220.95	-95.59	669797.52	6859881.43	32°24'53.363"N	102°42'34.576"W	240.74	336.605	9.37	-0.18	9.37	0.33	
4672.00	59.890	353.180	4567.20	262.53	246.34	-98.62	669794.48	6859906.82	32°24'53.613"N	102°42'34.623"W	265.35	338.181	9.40	10.86	9.40	-0.03	
4687.00	60.480	353.310	4574.65	275.45	259.26	-100.16	669792.95	6859919.74	32°24'53.740"N	102°42'34.647"W	277.94	338.878	4.00	77.71	3.93	0.87	
4718.00	60.520	353.520	4589.92	302.24	286.07	-103.25	669789.86	6859946.55	32°24'54.004"N	102°42'34.695"W	304.13	340.154	0.60	35.50	0.13	0.68	
4749.00	60.630	353.610	4605.15	329.04	312.90	-106.28	669786.83	6859973.37	32°24'54.268"N	102°42'34.743"W	330.45	341.240	0.44	-104.67	0.35	0.29	
4779.00	60.580	353.390	4619.87	354.98	338.87	-109.23	669783.87	6859999.34	32°24'54.524"N	102°42'34.790"W	356.04	342.133	0.66	-49.28	-0.17	-0.73	
4810.00	60.610	353.350	4635.10	381.80	365.69	-112.35	669780.75	6860026.17	32°24'54.788"N	102°42'34.839"W	382.56	342.921	0.15	-6.51	0.10	-0.13	



Actual Wellpath Report

No. 3421H AWP <60'-9380'> TD Proj: 9432' MD
Page 5 of 8



REFERENCE WELLPATH IDENTIFICATION

Operator	Forge Energy	Slot	H&P 348
Area	Andrews County, TX	Well	No. 3421H
Field	Andrews County, TX (NAD 83 / Grid)	Wellbore	No. 3421H AWB
Facility	(UL 14 Conway) Sec 21, Blk 14 ULS		

WELLPATH DATA (149 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
4841.00	61.690	353.210	4650.05	408.76	392.66	-115.53	669777.58	6860053.13	32°24'55.053"N	102°42'34.888"W	409.30	343.605	3.51	-1.70	3.48	-0.45	
4871.00	65.050	353.100	4663.50	435.40	419.28	-118.73	669774.38	6860079.75	32°24'55.315"N	102°42'34.938"W	435.77	344.190	11.20	-6.09	11.20	-0.37	
4902.00	68.720	352.680	4675.67	463.73	447.57	-122.26	669770.85	6860108.04	32°24'55.593"N	102°42'34.992"W	463.96	344.722	11.90	-5.20	11.84	-1.35	
4932.00	71.960	352.370	4685.76	491.82	475.57	-125.93	669767.18	6860136.04	32°24'55.869"N	102°42'35.048"W	491.96	345.169	10.84	-5.63	10.80	-1.03	
4963.00	74.900	352.070	4694.60	521.39	505.01	-129.95	669763.15	6860165.48	32°24'56.158"N	102°42'35.109"W	521.46	345.569	9.53	-4.61	9.48	-0.97	
4994.00	78.180	351.800	4701.81	551.40	534.86	-134.18	669758.93	6860195.32	32°24'56.452"N	102°42'35.172"W	551.43	345.916	10.61	-11.15	10.58	-0.87	
5024.00	81.090	351.220	4707.21	580.79	564.04	-138.54	669754.57	6860224.50	32°24'56.738"N	102°42'35.237"W	580.80	346.200	9.88	6.45	9.70	-1.93	
5055.00	84.880	351.650	4710.99	611.44	594.46	-143.12	669749.99	6860254.92	32°24'57.037"N	102°42'35.304"W	611.44	346.463	12.30	14.08	12.23	1.39	
5085.00	87.910	352.410	4712.88	641.24	624.11	-147.27	669745.84	6860284.56	32°24'57.329"N	102°42'35.366"W	641.25	346.723	10.41	22.31	10.10	2.53	
5115.00	91.420	353.850	4713.06	671.04	653.89	-150.86	669742.25	6860314.34	32°24'57.622"N	102°42'35.422"W	671.06	347.008	12.65	-145.56	11.70	4.80	
5206.00	90.370	353.130	4711.63	761.36	744.29	-161.18	669731.94	6860404.73	32°24'58.512"N	102°42'35.585"W	761.54	347.781	1.40	-101.49	-1.15	-0.79	
5297.00	90.120	351.900	4711.25	851.86	834.51	-173.03	669720.08	6860494.95	32°24'59.399"N	102°42'35.765"W	852.26	348.286	1.38	-88.97	-0.27	-1.35	
5389.00	90.220	346.320	4710.97	943.73	924.81	-190.40	669702.71	6860585.25	32°25'00.285"N	102°42'36.010"W	944.21	348.366	6.07	97.59	0.11	-6.07	
5481.00	90.180	346.620	4710.65	1035.73	1014.26	-211.93	669681.19	6860674.69	32°25'01.161"N	102°42'36.302"W	1036.16	348.198	0.33	87.46	-0.04	0.33	
5573.00	90.250	348.200	4710.31	1127.72	1104.04	-231.98	669661.14	6860764.47	32°25'02.040"N	102°42'36.578"W	1128.15	348.134	1.72	92.72	0.08	1.72	
5665.00	90.180	349.670	4709.96	1219.64	1194.33	-249.64	669643.48	6860854.75	32°25'02.926"N	102°42'36.826"W	1220.14	348.194	1.60	-97.51	-0.08	1.60	
5757.00	89.940	347.850	4709.86	1311.56	1284.56	-267.57	669625.55	6860944.98	32°25'03.811"N	102°42'37.077"W	1312.13	348.234	2.00	-97.28	-0.26	-1.98	
5849.00	89.820	346.910	4710.06	1403.55	1374.34	-287.67	669605.45	6861034.75	32°25'04.691"N	102°42'37.353"W	1404.12	348.178	1.03	-91.22	-0.13	-1.02	
5940.00	89.720	342.170	4710.42	1494.47	1462.02	-311.92	669581.20	6861122.42	32°25'05.548"N	102°42'37.677"W	1494.92	347.957	5.21	-123.69	-0.11	-5.21	
6032.00	89.660	342.080	4710.92	1586.19	1549.58	-340.16	669552.97	6861209.97	32°25'06.402"N	102°42'38.047"W	1586.47	347.619	0.12	-92.93	-0.07	-0.10	
6122.00	89.510	339.140	4711.57	1675.70	1634.46	-370.03	669523.09	6861294.85	32°25'07.230"N	102°42'38.435"W	1675.83	347.244	3.27	-84.10	-0.17	-3.27	
6212.00	89.660	337.690	4712.22	1764.79	1718.15	-403.14	669489.99	6861378.53	32°25'08.044"N	102°42'38.860"W	1764.81	346.795	1.62	-51.34	0.17	-1.61	
6303.00	89.780	337.540	4712.67	1854.69	1802.29	-437.80	669455.33	6861462.67	32°25'08.862"N	102°42'39.303"W	1854.70	346.347	0.21	95.87	0.13	-0.16	
6393.00	89.630	339.000	4713.13	1943.75	1885.89	-471.11	669422.02	6861546.26	32°25'09.676"N	102°42'39.731"W	1943.84	345.974	1.63	73.08	-0.17	1.62	
6483.00	89.910	339.920	4713.49	2033.06	1970.17	-502.69	669390.44	6861630.53	32°25'10.496"N	102°42'40.138"W	2033.29	345.686	1.07	113.84	0.31	1.02	
6573.00	89.720	340.350	4713.78	2122.50	2054.81	-533.27	669359.86	6861715.17	32°25'11.321"N	102°42'40.534"W	2122.88	345.451	0.52	67.46	-0.21	0.48	
6664.00	89.940	340.880	4714.05	2213.01	2140.65	-563.48	669329.66	6861801.00	32°25'12.158"N	102°42'40.927"W	2213.57	345.253	0.63	86.95	0.24	0.58	
6754.00	90.090	343.690	4714.03	2302.75	2226.37	-590.86	669302.28	6861886.72	32°25'12.994"N	102°42'41.286"W	2303.44	345.137	3.13	99.07	0.17	3.12	
6844.00	89.600	346.760	4714.27	2392.71	2313.39	-613.81	669279.33	6861973.73	32°25'13.846"N	102°42'41.594"W	2393.43	345.140	3.45	84.20	-0.54	3.41	
6934.00	89.720	347.940	4714.81	2482.70	2401.20	-633.52	669259.62	6862061.54	32°25'14.706"N	102°42'41.865"W	2483.37	345.220	1.32	-62.75	0.13	1.31	



Actual Wellpath Report

No. 3421H AWP <60'-9380'> TD Proj: 9432' MD
Page 6 of 8



REFERENCE WELLPATH IDENTIFICATION

Operator	Forge Energy	Slot	H&P 348
Area	Andrews County, TX	Well	No. 3421H
Field	Andrews County, TX (NAD 83 / Grid)	Wellbore	No. 3421H AWB
Facility	(UL 14 Conway) Sec 21, Blk 14 ULS		

WELLPATH DATA (149 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
7025.00	90.060	347.280	4714.98	2573.69	2490.08	-653.04	669240.10	6862150.41	32°25'15.577"N	102°42'42.134"W	2574.29	345.305	0.82	-67.38	0.37	-0.73	
7115.00	90.310	346.680	4714.69	2663.68	2577.76	-673.32	669219.83	6862238.09	32°25'16.436"N	102°42'42.411"W	2664.25	345.361	0.72	98.15	0.28	-0.67	
7205.00	89.720	350.800	4714.67	2753.60	2666.01	-690.89	669202.26	6862326.33	32°25'17.301"N	102°42'42.657"W	2754.08	345.472	4.62	90.01	-0.66	4.58	
7296.00	89.720	354.680	4715.11	2844.05	2756.26	-702.39	669190.76	6862416.58	32°25'18.189"N	102°42'42.834"W	2844.35	345.703	4.26	83.35	0.00	4.26	
7368.00	89.910	356.310	4715.35	2915.17	2828.04	-708.04	669185.11	6862488.35	32°25'18.897"N	102°42'42.933"W	2915.33	345.944	2.28	-66.72	0.26	2.26	
7458.00	90.710	354.450	4714.86	3004.09	2917.74	-715.29	669177.86	6862578.04	32°25'19.781"N	102°42'43.060"W	3004.14	346.225	2.25	4.73	0.89	-2.07	
7549.00	92.160	354.570	4712.58	3094.18	3008.29	-723.99	669169.16	6862668.59	32°25'20.672"N	102°42'43.203"W	3094.19	346.468	1.60	-62.86	1.59	0.13	
7639.00	92.830	353.260	4708.66	3183.35	3097.70	-733.52	669159.63	6862757.99	32°25'21.553"N	102°42'43.356"W	3183.36	346.678	1.63	-63.08	0.74	-1.46	
7729.00	93.680	351.580	4703.55	3272.73	3186.76	-745.38	669147.77	6862847.05	32°25'22.428"N	102°42'43.536"W	3272.77	346.835	2.09	-103.71	0.94	-1.87	
7820.00	93.090	349.170	4698.18	3363.36	3276.32	-760.56	669132.59	6862936.60	32°25'23.308"N	102°42'43.755"W	3363.44	346.931	2.72	-116.72	-0.65	-2.65	
7910.00	92.380	347.760	4693.88	3453.21	3364.40	-778.54	669114.61	6863024.67	32°25'24.172"N	102°42'44.006"W	3453.30	346.971	1.75	-13.30	-0.79	-1.57	
8000.00	93.520	347.490	4689.25	3543.07	3452.19	-797.80	669095.35	6863112.45	32°25'25.032"N	102°42'44.271"W	3543.18	346.987	1.30	-160.21	1.27	-0.30	
8091.00	89.320	345.980	4687.00	3634.02	3540.71	-818.67	669074.48	6863200.97	32°25'25.899"N	102°42'44.556"W	3634.12	346.981	4.90	-163.26	-4.62	-1.66	
8181.00	86.300	345.070	4690.44	3723.93	3627.78	-841.15	669052.01	6863288.03	32°25'26.751"N	102°42'44.859"W	3724.02	346.946	3.50	14.65	-3.36	-1.01	
8272.00	87.600	345.410	4695.28	3814.77	3715.65	-864.30	669028.86	6863375.90	32°25'27.610"N	102°42'45.170"W	3814.85	346.905	1.48	107.88	1.43	0.37	
8362.00	87.410	346.000	4699.20	3904.68	3802.78	-886.50	669006.66	6863463.02	32°25'28.463"N	102°42'45.469"W	3904.74	346.878	0.69	-14.51	-0.21	0.66	
8452.00	89.110	345.560	4701.93	3994.62	3889.98	-908.60	668984.56	6863550.22	32°25'29.316"N	102°42'45.768"W	3994.68	346.853	1.95	-77.01	1.89	-0.49	
8542.00	89.410	344.260	4703.09	4084.58	3976.87	-932.03	668961.14	6863637.10	32°25'30.166"N	102°42'46.081"W	4084.62	346.810	1.48	-150.23	0.33	-1.44	
8633.00	87.960	343.430	4705.18	4175.45	4064.25	-957.34	668935.83	6863724.47	32°25'31.020"N	102°42'46.417"W	4175.48	346.746	1.84	170.35	-1.59	-0.91	
8723.00	85.030	343.930	4710.68	4265.16	4150.45	-982.58	668910.59	6863810.67	32°25'31.862"N	102°42'46.752"W	4265.17	346.681	3.30	163.18	-3.26	0.56	
8813.00	84.010	344.240	4719.28	4354.66	4236.60	-1007.14	668886.02	6863896.82	32°25'32.704"N	102°42'47.078"W	4354.67	346.628	1.18	-2.58	-1.13	0.34	
8904.00	85.340	344.180	4727.72	4445.19	4323.79	-1031.80	668861.37	6863984.00	32°25'33.556"N	102°42'47.407"W	4445.20	346.578	1.46	-22.34	1.46	-0.07	
8994.00	86.360	343.760	4734.23	4534.87	4410.06	-1056.59	668836.59	6864070.26	32°25'34.400"N	102°42'47.736"W	4534.87	346.527	1.23	-11.63	1.13	-0.47	
9084.00	87.720	343.480	4738.88	4624.63	4496.29	-1081.93	668811.24	6864156.49	32°25'35.242"N	102°42'48.072"W	4624.63	346.470	1.54	24.45	1.51	-0.31	
9174.00	89.810	344.430	4740.82	4714.51	4582.76	-1106.80	668786.38	6864242.95	32°25'36.087"N	102°42'48.402"W	4714.52	346.422	2.55	-7.85	2.32	1.06	
9265.00	91.260	344.230	4739.97	4805.43	4670.37	-1131.38	668761.80	6864330.55	32°25'36.944"N	102°42'48.730"W	4805.45	346.383	1.61	-7.71	1.59	-0.22	
9355.00	92.810	344.020	4736.77	4895.29	4756.88	-1155.98	668737.20	6864417.06	32°25'37.789"N	102°42'49.057"W	4895.33	346.341	1.74	-1.59	1.72	-0.23	
9380.00	93.170	344.010	4735.47	4920.24	4780.88	-1162.85	668730.32	6864441.06	32°25'38.024"N	102°42'49.148"W	4920.27	346.329	1.44	0.00	1.44	-0.04	Last Baker MWD survey
9432.00	93.170	344.010	4732.60	4972.11	4830.79	-1177.16	668716.02	6864490.97	32°25'38.511"N	102°42'49.338"W	4972.15	346.305	0.00		0.00	0.00	Projection to Bit



Actual Wellpath Report

No. 3421H AWP <60'-9380'> TD Proj: 9432' MD
Page 7 of 8



REFERENCE WELLPATH IDENTIFICATION

Operator	Forge Energy	Slot	H&P 348
Area	Andrews County, TX	Well	No. 3421H
Field	Andrews County, TX (NAD 83 / Grid)	Wellbore	No. 3421H AWB
Facility	(UL 14 Conway) Sec 21, Blk 14 ULS		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
UL 14 Conway No. 3412H LP Rev 2		4707.00	639.78	-153.08	669740.03	6860300.24	32°24'57.481"N	102°42'35.441"W	point
UL 14 Conway No. 3412H PBHL Rev 2		4730.00	4836.37	-1157.18	668736.00	6864496.54	32°25'38.575"N	102°42'49.108"W	rectangle

WELLPATH COMPOSITION - Ref Wellbore: No. 3421H AWB Ref Wellpath: No. 3421H AWP <60'-9380'> TD Proj: 9432' MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1819.00	ISCWSA MWD, Rev. 2 (Standard)	Inpetro MWD <60'-1819'>	No. 3421H AWB
1819.00	9380.00	AT Curve (Short Spaced)	BHI MWD <1887'-9380'>	No. 3421H AWB
9380.00	9432.00	Blind Drilling (std)	Projection to bit	No. 3421H AWB



Actual Wellpath Report

No. 3421H AWP <60'-9380'> TD Proj: 9432' MD
Page 8 of 8



REFERENCE WELLPATH IDENTIFICATION

Operator	Forge Energy	Slot	H&P 348
Area	Andrews County, TX	Well	No. 3421H
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Facility	(UL 14 Conway) Sec 21, Blk 14 ULS		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1819.00	2.590	239.710	1817.57	Tie On
9380.00	93.170	344.010	4735.47	Last Baker MWD survey
9432.00	93.170	344.010	4732.60	Projection to Bit