



Actual Wellpath Report

No. 2H AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	Chesapeake Operating, Inc.	Slot	No. 2H SHL
Area	Winkler County, TX	Well	No. 2H
Field	(University) Sec 46, Blk 20	Wellbore	No. 2H AWP
Facility	University 20-46 WNK		

REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert Texas SP, Central Zone (4203), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.999946	Report Generated	10/28/2011 at 7:04:49 AM
Convergence at slot	1.53° West	Database/Source file	WA Midland/No. 2H_AWP.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	1078012.78	734303.53	31°39'06.890"N	103°17'47.900"W
Facility Reference Pt			1078012.78	734303.53	31°39'06.890"N	103°17'47.900"W
Field Reference Pt			1078012.78	734303.53	31°39'06.890"N	103°17'47.900"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 2H SHL (KB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Rig on No. 2H SHL (KB) to Mean Sea Level	2792.00ft
Vertical Reference Pt	Rig on No. 2H SHL (KB)	Rig on No. 2H SHL (KB) to Mud Line at Slot (No. 2H SHL)	25.00ft
MD Reference Pt	Rig on No. 2H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	163.72°

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WELLPATH DATA (177 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]
0.00†	0.000	212.700	0.00	0.00	0.00	0.00	1078012.77	734303.53	31°39'06.890"N	103°17'47.900"W	0.00
25.00	0.000	212.700	25.00	0.00	0.00	0.00	1078012.77	734303.53	31°39'06.890"N	103°17'47.900"W	0.00
100.00	0.570	212.700	100.00	0.24	-0.31	-0.20	1078012.57	734303.22	31°39'06.887"N	103°17'47.902"W	0.76
200.00	0.460	201.180	199.99	0.89	-1.11	-0.62	1078012.16	734302.42	31°39'06.879"N	103°17'47.907"W	0.15
300.00	0.310	192.270	299.99	1.45	-1.75	-0.82	1078011.96	734301.79	31°39'06.873"N	103°17'47.909"W	0.16
400.00	0.240	186.900	399.99	1.88	-2.22	-0.90	1078011.87	734301.31	31°39'06.868"N	103°17'47.910"W	0.07
500.00	0.060	75.930	499.99	2.07	-2.41	-0.87	1078011.90	734301.12	31°39'06.866"N	103°17'47.909"W	0.27
600.00	0.220	130.640	599.99	2.23	-2.53	-0.68	1078012.10	734301.01	31°39'06.865"N	103°17'47.907"W	0.19
700.00	0.140	72.020	699.99	2.39	-2.61	-0.42	1078012.36	734300.92	31°39'06.864"N	103°17'47.904"W	0.19
800.00	0.230	203.530	799.99	2.54	-2.76	-0.38	1078012.39	734300.77	31°39'06.863"N	103°17'47.904"W	0.34
900.00	0.170	235.480	899.99	2.74	-3.03	-0.58	1078012.19	734300.50	31°39'06.860"N	103°17'47.906"W	0.12
1000.00	0.300	116.540	999.99	2.97	-3.23	-0.47	1078012.30	734300.30	31°39'06.858"N	103°17'47.904"W	0.41
1100.00	0.150	226.270	1099.99	3.20	-3.44	-0.33	1078012.44	734300.10	31°39'06.856"N	103°17'47.903"W	0.38
1200.00	0.410	77.350	1199.99	3.29	-3.45	-0.08	1078012.70	734300.08	31°39'06.856"N	103°17'47.900"W	0.54
1300.00	0.310	85.850	1299.99	3.37	-3.35	0.54	1078013.32	734300.18	31°39'06.857"N	103°17'47.893"W	0.11
1400.00	0.360	250.420	1399.99	3.44	-3.44	0.52	1078013.29	734300.10	31°39'06.856"N	103°17'47.893"W	0.66
1500.00	0.630	247.630	1499.98	3.52	-3.75	-0.29	1078012.49	734299.78	31°39'06.853"N	103°17'47.902"W	0.27
1600.00	0.310	155.200	1599.98	3.84	-4.20	-0.68	1078012.09	734299.33	31°39'06.848"N	103°17'47.907"W	0.71
1700.00	0.630	140.150	1699.98	4.62	-4.87	-0.22	1078012.56	734298.66	31°39'06.842"N	103°17'47.901"W	0.34
1800.00	0.650	75.460	1799.97	5.14	-5.15	0.68	1078013.46	734298.38	31°39'06.839"N	103°17'47.891"W	0.69
1900.00	1.040	41.990	1899.96	4.68	-4.34	1.84	1078014.61	734299.20	31°39'06.848"N	103°17'47.877"W	0.61
2000.00	0.630	302.190	1999.95	3.79	-3.37	1.98	1078014.76	734300.16	31°39'06.857"N	103°17'47.876"W	1.30
2100.00	0.540	228.480	2099.95	3.58	-3.39	1.16	1078013.94	734300.14	31°39'06.857"N	103°17'47.885"W	0.71
2200.00	0.730	71.580	2199.95	3.75	-3.50	1.42	1078014.19	734300.03	31°39'06.856"N	103°17'47.883"W	1.24
2300.00	0.330	284.650	2299.94	3.58	-3.22	1.74	1078014.52	734300.31	31°39'06.859"N	103°17'47.879"W	1.02
2400.00	0.700	119.890	2399.94	3.88	-3.46	1.99	1078014.77	734300.08	31°39'06.856"N	103°17'47.876"W	1.02
2500.00	0.510	354.310	2499.94	3.88	-3.32	2.48	1078015.25	734300.21	31°39'06.858"N	103°17'47.870"W	1.08
2600.00	0.290	225.910	2599.94	3.56	-3.05	2.25	1078015.03	734300.48	31°39'06.860"N	103°17'47.873"W	0.73
2700.00	0.630	68.010	2699.94	3.62	-3.02	2.58	1078015.35	734300.51	31°39'06.861"N	103°17'47.869"W	0.91
2800.00	0.350	285.220	2799.94	3.41	-2.73	2.79	1078015.57	734300.80	31°39'06.864"N	103°17'47.867"W	0.93
2900.00	0.840	83.760	2899.93	3.38	-2.57	3.23	1078016.00	734300.96	31°39'06.865"N	103°17'47.862"W	1.17
3000.00	0.690	280.860	2999.93	3.23	-2.38	3.37	1078016.14	734301.15	31°39'06.867"N	103°17'47.860"W	1.51
3100.00	0.760	110.120	3099.93	3.35	-2.50	3.40	1078016.17	734301.03	31°39'06.866"N	103°17'47.860"W	1.45
3200.00	0.430	320.160	3199.92	3.40	-2.44	3.78	1078016.55	734301.09	31°39'06.867"N	103°17'47.856"W	1.15
3300.00	0.680	116.550	3299.92	3.46	-2.41	4.07	1078016.84	734301.12	31°39'06.867"N	103°17'47.852"W	1.09
3400.00	0.640	322.780	3399.92	3.34	-2.23	4.26	1078017.04	734301.30	31°39'06.869"N	103°17'47.850"W	1.29
3500.00	0.360	142.390	3499.92	3.11	-2.04	4.12	1078016.89	734301.49	31°39'06.871"N	103°17'47.852"W	1.00
3600.00	0.280	355.360	3599.92	3.16	-2.04	4.29	1078017.06	734301.49	31°39'06.871"N	103°17'47.850"W	0.61
3700.00	0.540	121.080	3699.92	3.27	-2.04	4.67	1078017.45	734301.49	31°39'06.871"N	103°17'47.845"W	0.74
3800.00	0.820	323.760	3799.91	2.95	-1.71	4.65	1078017.43	734301.82	31°39'06.874"N	103°17'47.846"W	1.33
3900.00	0.550	126.940	3899.91	2.66	-1.42	4.61	1078017.39	734302.11	31°39'06.877"N	103°17'47.846"W	1.36
4000.00	0.730	56.890	3999.91	2.86	-1.36	5.53	1078018.31	734302.17	31°39'06.878"N	103°17'47.836"W	0.75
4100.00	0.380	212.520	4099.90	2.89	-1.29	5.89	1078018.66	734302.24	31°39'06.879"N	103°17'47.832"W	1.09
4200.00	1.040	81.290	4199.90	3.23	-1.43	6.61	1078019.38	734302.10	31°39'06.878"N	103°17'47.823"W	1.32
4300.00	0.370	254.870	4299.89	3.34	-1.38	7.19	1078019.97	734302.15	31°39'06.878"N	103°17'47.816"W	1.41

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Area	Winkler County, TX	Well	No. 2H
Field	(University) Sec 46, Blk 20	Wellbore	No. 2H AWP
Facility	University 20-46 WNK		

WELLPATH DATA (177 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]
4400.00	0.880	109.150	4399.89	3.78	-1.72	7.60	1078020.38	734301.81	31°39'06.875"N	103°17'47.812"W	1.20
4500.00	0.320	284.560	4499.89	4.08	-1.90	8.06	1078020.83	734301.63	31°39'06.873"N	103°17'47.806"W	1.20
4600.00	1.180	93.920	4599.88	4.30	-1.90	8.82	1078021.59	734301.63	31°39'06.874"N	103°17'47.797"W	1.50
4700.00	0.390	47.680	4699.87	4.50	-1.74	10.10	1078022.87	734301.79	31°39'06.875"N	103°17'47.783"W	0.95
4800.00	0.830	137.190	4799.87	5.00	-2.04	10.84	1078023.61	734301.49	31°39'06.873"N	103°17'47.774"W	0.91
4900.00	0.970	24.340	4899.86	5.01	-1.80	11.68	1078024.46	734301.73	31°39'06.875"N	103°17'47.764"W	1.50
5000.00	0.540	242.590	4999.86	4.45	-1.25	11.61	1078024.39	734302.28	31°39'06.881"N	103°17'47.765"W	1.43
5100.00	1.090	89.870	5099.85	4.81	-1.46	12.14	1078024.92	734302.07	31°39'06.879"N	103°17'47.759"W	1.59
5200.00	1.010	94.580	5199.84	5.39	-1.53	13.97	1078026.75	734302.00	31°39'06.879"N	103°17'47.738"W	0.12
5300.00	0.910	92.980	5299.82	5.96	-1.64	15.65	1078028.42	734301.89	31°39'06.878"N	103°17'47.719"W	0.10
5400.00	0.830	79.060	5399.81	6.29	-1.55	17.15	1078029.92	734301.98	31°39'06.879"N	103°17'47.701"W	0.23
5500.00	0.910	74.240	5499.80	6.37	-1.19	18.62	1078031.40	734302.34	31°39'06.883"N	103°17'47.684"W	0.11
5600.00	0.980	79.280	5599.79	6.46	-0.82	20.23	1078033.00	734302.71	31°39'06.887"N	103°17'47.666"W	0.11
5700.00	0.590	100.380	5699.78	6.77	-0.75	21.58	1078034.35	734302.78	31°39'06.888"N	103°17'47.650"W	0.48
5800.00	0.480	91.320	5799.77	7.13	-0.86	22.50	1078035.27	734302.68	31°39'06.887"N	103°17'47.640"W	0.14
5900.00	0.590	71.920	5899.77	7.24	-0.71	23.41	1078036.18	734302.83	31°39'06.889"N	103°17'47.629"W	0.21
6000.00	0.740	93.810	5999.76	7.44	-0.59	24.54	1078037.32	734302.94	31°39'06.891"N	103°17'47.616"W	0.29
6100.00	0.430	103.330	6099.76	7.85	-0.72	25.55	1078038.33	734302.81	31°39'06.890"N	103°17'47.604"W	0.32
6200.00	0.370	91.740	6199.75	8.14	-0.81	26.24	1078039.01	734302.72	31°39'06.889"N	103°17'47.596"W	0.10
6300.00	0.550	84.700	6299.75	8.33	-0.78	27.04	1078039.81	734302.75	31°39'06.889"N	103°17'47.587"W	0.19
6400.00	0.410	85.930	6399.75	8.50	-0.71	27.88	1078040.65	734302.82	31°39'06.890"N	103°17'47.577"W	0.14
6500.00	0.420	121.730	6499.74	8.84	-0.88	28.54	1078041.32	734302.65	31°39'06.889"N	103°17'47.570"W	0.26
6600.00	0.140	40.430	6599.74	9.05	-0.98	28.94	1078041.71	734302.55	31°39'06.888"N	103°17'47.565"W	0.42
6700.00	0.260	66.220	6699.74	8.95	-0.79	29.22	1078042.00	734302.74	31°39'06.890"N	103°17'47.562"W	0.15
6800.00	0.220	107.060	6799.74	9.03	-0.76	29.61	1078042.39	734302.77	31°39'06.890"N	103°17'47.557"W	0.17
6900.00	0.180	185.200	6899.74	9.28	-0.97	29.78	1078042.56	734302.56	31°39'06.888"N	103°17'47.555"W	0.25
7000.00	0.060	294.670	6999.74	9.39	-1.11	29.72	1078042.49	734302.43	31°39'06.887"N	103°17'47.556"W	0.21
7100.00	0.060	105.250	7099.74	9.38	-1.10	29.72	1078042.50	734302.43	31°39'06.887"N	103°17'47.556"W	0.12
7200.00	0.290	164.790	7199.74	9.67	-1.35	29.84	1078042.61	734302.18	31°39'06.884"N	103°17'47.554"W	0.26
7300.00	0.410	242.560	7299.74	9.99	-1.76	29.59	1078042.36	734301.77	31°39'06.880"N	103°17'47.557"W	0.45
7400.00	0.360	188.340	7399.74	10.34	-2.24	29.23	1078042.00	734301.29	31°39'06.876"N	103°17'47.561"W	0.35
7500.00	0.910	200.580	7499.73	11.26	-3.29	28.90	1078041.68	734300.24	31°39'06.865"N	103°17'47.565"W	0.56
7600.00	0.600	201.740	7599.72	12.31	-4.52	28.43	1078041.20	734299.01	31°39'06.853"N	103°17'47.570"W	0.31
7700.00	0.690	175.650	7699.72	13.31	-5.61	28.28	1078041.05	734297.92	31°39'06.842"N	103°17'47.571"W	0.30
7800.00	0.740	164.920	7799.71	14.55	-6.83	28.49	1078041.27	734296.70	31°39'06.830"N	103°17'47.568"W	0.14
7900.00	0.840	137.880	7899.70	15.85	-8.00	29.15	1078041.93	734295.53	31°39'06.819"N	103°17'47.560"W	0.38
8000.00	1.120	156.830	7999.68	17.48	-9.44	30.03	1078042.80	734294.09	31°39'06.804"N	103°17'47.550"W	0.42
8100.00	0.830	161.570	8099.67	19.18	-11.03	30.64	1078043.42	734292.50	31°39'06.789"N	103°17'47.542"W	0.30
8200.00	1.100	145.340	8199.66	20.81	-12.51	31.42	1078044.19	734291.03	31°39'06.775"N	103°17'47.533"W	0.38
8300.00	0.850	181.610	8299.64	22.43	-14.04	31.94	1078044.72	734289.49	31°39'06.760"N	103°17'47.526"W	0.65
8400.00	0.450	178.900	8399.64	23.51	-15.17	31.93	1078044.70	734288.36	31°39'06.748"N	103°17'47.526"W	0.40
8500.00	0.750	175.160	8499.63	24.53	-16.22	31.99	1078044.77	734287.32	31°39'06.738"N	103°17'47.525"W	0.30
8600.00	0.570	204.160	8599.62	25.55	-17.32	31.84	1078044.62	734286.21	31°39'06.727"N	103°17'47.526"W	0.37
8700.00	0.700	172.600	8699.62	26.54	-18.38	31.72	1078044.49	734285.15	31°39'06.717"N	103°17'47.528"W	0.37
8800.00	0.560	181.510	8799.61	27.60	-19.48	31.79	1078044.56	734284.06	31°39'06.706"N	103°17'47.526"W	0.17

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Area	Winkler County, TX	Well	No. 2H
Field	(University) Sec 46, Blk 20	Wellbore	No. 2H AWP
Facility	University 20-46 WNK		

WELLPATH DATA (177 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]
8900.00	0.340	172.600	8899.61	28.36	-20.26	31.81	1078044.58	734283.27	31°39'06.698"N	103°17'47.526"W	0.23
9000.00	0.490	227.310	8999.61	28.85	-20.84	31.53	1078044.31	734282.69	31°39'06.692"N	103°17'47.529"W	0.40
9100.00	0.140	213.850	9099.60	29.12	-21.23	31.15	1078043.93	734282.30	31°39'06.688"N	103°17'47.533"W	0.36
9200.00	0.340	186.850	9199.60	29.47	-21.63	31.05	1078043.82	734281.90	31°39'06.684"N	103°17'47.534"W	0.22
9300.00	0.360	82.180	9299.60	29.79	-21.88	31.32	1078044.10	734281.65	31°39'06.682"N	103°17'47.531"W	0.55
9400.00	0.850	193.310	9399.60	30.48	-22.56	31.47	1078044.24	734280.97	31°39'06.675"N	103°17'47.529"W	1.04
9500.00	1.240	171.230	9499.58	32.19	-24.35	31.46	1078044.23	734279.18	31°39'06.657"N	103°17'47.529"W	0.55
9600.00	1.440	167.880	9599.55	34.52	-26.65	31.89	1078044.66	734276.88	31°39'06.635"N	103°17'47.523"W	0.21
9700.00	1.420	169.760	9699.52	37.01	-29.10	32.37	1078045.15	734274.43	31°39'06.611"N	103°17'47.517"W	0.05
9800.00	1.310	203.240	9799.50	39.12	-31.37	32.14	1078044.91	734272.16	31°39'06.588"N	103°17'47.519"W	0.79
9900.00	1.710	232.080	9899.46	40.55	-33.34	30.51	1078043.29	734270.20	31°39'06.568"N	103°17'47.537"W	0.85
10000.00	2.260	242.070	9999.40	41.50	-35.18	27.59	1078040.37	734268.36	31°39'06.549"N	103°17'47.570"W	0.65
10100.00	3.090	247.870	10099.29	42.17	-37.11	23.36	1078036.13	734266.42	31°39'06.529"N	103°17'47.618"W	0.87
10200.00	2.860	248.930	10199.16	42.66	-39.03	18.53	1078031.30	734264.51	31°39'06.509"N	103°17'47.674"W	0.24
10300.00	3.200	262.360	10299.02	42.45	-40.29	13.44	1078026.21	734263.24	31°39'06.495"N	103°17'47.732"W	0.78
10400.00	3.090	262.210	10398.87	41.63	-41.03	8.00	1078020.77	734262.50	31°39'06.486"N	103°17'47.795"W	0.11
10500.00	3.680	266.890	10498.69	40.50	-41.57	2.13	1078014.90	734261.96	31°39'06.479"N	103°17'47.863"W	0.65
10600.00	3.600	264.750	10598.49	39.17	-42.03	-4.21	1078008.57	734261.50	31°39'06.473"N	103°17'47.936"W	0.16
10700.00	3.600	259.810	10698.30	38.23	-42.87	-10.42	1078002.35	734260.66	31°39'06.463"N	103°17'48.007"W	0.31
10800.00	3.360	259.910	10798.11	37.59	-43.94	-16.40	1077996.38	734259.59	31°39'06.451"N	103°17'48.076"W	0.24
10900.00	3.420	267.080	10897.94	36.58	-44.61	-22.26	1077990.51	734258.92	31°39'06.443"N	103°17'48.144"W	0.43
10940.00	3.100	269.910	10937.87	36.00	-44.67	-24.53	1077988.24	734258.86	31°39'06.442"N	103°17'48.170"W	0.90
10999.00	3.900	286.400	10996.76	34.47	-44.11	-28.05	1077984.72	734259.43	31°39'06.446"N	103°17'48.211"W	2.17
11044.00	2.300	194.700	11041.72	34.42	-44.55	-29.75	1077983.02	734258.98	31°39'06.441"N	103°17'48.230"W	10.19
11089.00	4.800	172.900	11086.63	37.06	-47.29	-29.75	1077983.03	734256.24	31°39'06.414"N	103°17'48.229"W	6.22
11134.00	10.200	164.300	11131.23	42.90	-53.00	-28.44	1077984.34	734250.53	31°39'06.358"N	103°17'48.213"W	12.22
11179.00	16.300	165.600	11175.01	53.21	-62.96	-25.79	1077986.99	734240.57	31°39'06.260"N	103°17'48.179"W	13.57
11200.00	19.500	164.800	11194.99	59.66	-69.20	-24.13	1077988.64	734234.33	31°39'06.199"N	103°17'48.158"W	15.28
11224.00	21.700	164.100	11217.45	68.10	-77.33	-21.87	1077990.91	734226.20	31°39'06.119"N	103°17'48.129"W	9.22
11269.00	27.300	158.600	11258.39	86.72	-94.96	-15.82	1077996.96	734208.58	31°39'05.946"N	103°17'48.054"W	13.42
11314.00	31.900	157.100	11297.51	108.82	-115.53	-7.42	1078005.35	734188.01	31°39'05.745"N	103°17'47.950"W	10.35
11359.00	36.500	156.100	11334.72	133.91	-138.73	2.63	1078015.41	734164.81	31°39'05.518"N	103°17'47.827"W	10.30
11404.00	42.100	153.300	11369.53	162.03	-164.47	14.84	1078027.62	734139.07	31°39'05.267"N	103°17'47.678"W	13.05
11449.00	48.800	155.300	11401.08	193.65	-193.36	28.71	1078041.49	734110.18	31°39'04.985"N	103°17'47.508"W	15.22
11494.00	55.800	152.500	11428.59	228.70	-225.29	44.40	1078057.17	734078.25	31°39'04.673"N	103°17'47.317"W	16.31
11540.00	63.000	150.300	11451.99	267.35	-260.01	63.36	1078076.14	734043.53	31°39'04.334"N	103°17'47.087"W	16.18
11585.00	67.800	149.800	11470.72	307.09	-295.45	83.79	1078096.56	734008.10	31°39'03.989"N	103°17'46.840"W	10.71
11630.00	69.400	149.400	11487.14	347.72	-331.59	104.99	1078117.76	733971.96	31°39'03.637"N	103°17'46.584"W	3.65
11675.00	71.200	150.000	11502.31	388.83	-368.17	126.36	1078139.13	733935.39	31°39'03.281"N	103°17'46.325"W	4.19
11720.00	74.600	149.600	11515.54	430.57	-405.33	148.00	1078160.76	733898.22	31°39'02.919"N	103°17'46.064"W	7.60
11765.00	78.500	149.300	11526.00	472.97	-443.01	170.24	1078183.00	733860.54	31°39'02.552"N	103°17'45.795"W	8.69
11811.00	82.600	149.100	11533.55	516.89	-481.98	193.47	1078206.23	733821.58	31°39'02.173"N	103°17'45.514"W	8.92
11832.00	85.500	148.700	11535.73	537.08	-499.86	204.26	1078217.02	733803.69	31°39'01.999"N	103°17'45.384"W	13.94
11944.00	85.500	148.000	11544.52	644.74	-594.91	262.84	1078275.60	733708.65	31°39'01.074"N	103°17'44.677"W	0.62
12038.00	91.500	150.600	11546.98	735.70	-675.67	310.79	1078323.55	733627.90	31°39'00.288"N	103°17'44.098"W	6.96

Actual Wellpath Report

No. 2H AWP

Page 5 of 5

REFERENCE WELLPATH IDENTIFICATION

Operator	Chesapeake Operating, Inc.	Slot	No. 2H SHL
Area	Winkler County, TX	Well	No. 2H
Field	(University) Sec 46, Blk 20	Wellbore	No. 2H AWP
Facility	University 20-46 WNK		

WELLPATH DATA (177 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]
12132.00	91.900	152.600	11544.19	827.56	-758.31	355.48	1078368.23	733545.26	31°38'59.482"N	103°17'43.556"W	2.17
12226.00	91.900	157.000	11541.07	920.35	-843.30	395.47	1078408.22	733460.28	31°38'58.652"N	103°17'43.067"W	4.68
12319.00	89.900	163.300	11539.61	1013.10	-930.72	427.02	1078439.78	733372.87	31°38'57.795"N	103°17'42.675"W	7.11
12413.00	89.900	165.500	11539.77	1107.09	-1021.25	452.30	1078465.05	733282.34	31°38'56.906"N	103°17'42.355"W	2.34
12506.00	89.900	165.300	11539.93	1200.05	-1111.24	475.74	1078488.49	733192.35	31°38'56.022"N	103°17'42.056"W	0.22
12600.00	90.200	165.400	11539.85	1294.01	-1202.19	499.52	1078512.26	733101.41	31°38'55.129"N	103°17'41.753"W	0.34
12694.00	91.100	166.100	11538.78	1387.94	-1293.29	522.65	1078535.40	733010.31	31°38'54.233"N	103°17'41.458"W	1.21
12788.00	91.500	168.300	11536.65	1481.74	-1384.92	543.47	1078556.22	732918.69	31°38'53.332"N	103°17'41.189"W	2.38
12881.00	90.500	170.500	11535.03	1574.26	-1476.32	560.58	1078573.32	732827.30	31°38'52.433"N	103°17'40.963"W	2.60
12975.00	90.200	171.600	11534.45	1667.49	-1569.17	575.20	1078587.94	732734.45	31°38'51.518"N	103°17'40.765"W	1.21
13069.00	90.100	171.200	11534.21	1760.65	-1662.11	589.26	1078602.00	732641.51	31°38'50.602"N	103°17'40.574"W	0.44
13163.00	90.000	169.300	11534.13	1854.04	-1754.75	605.17	1078617.92	732548.88	31°38'49.690"N	103°17'40.361"W	2.02
13257.00	89.900	167.800	11534.21	1947.70	-1846.87	623.83	1078636.57	732456.76	31°38'48.783"N	103°17'40.117"W	1.60
13351.00	89.300	169.400	11534.86	2041.35	-1939.01	642.41	1078655.15	732364.62	31°38'47.877"N	103°17'39.874"W	1.82
13445.00	89.500	169.900	11535.85	2134.84	-2031.48	659.30	1078672.04	732272.16	31°38'46.967"N	103°17'39.650"W	0.57
13538.00	89.000	169.700	11537.07	2227.31	-2123.00	675.77	1078688.50	732180.65	31°38'46.065"N	103°17'39.431"W	0.58
13632.00	89.500	165.100	11538.30	2321.09	-2214.71	696.27	1078709.00	732088.95	31°38'45.164"N	103°17'39.166"W	4.92
13726.00	89.400	161.500	11539.20	2415.06	-2304.72	723.27	1078736.01	731998.94	31°38'44.280"N	103°17'38.826"W	3.83
13820.00	89.200	163.200	11540.35	2509.03	-2394.29	751.77	1078764.50	731909.38	31°38'43.402"N	103°17'38.469"W	1.82
13914.00	89.200	162.100	11541.66	2603.00	-2484.00	779.80	1078792.53	731819.67	31°38'42.522"N	103°17'38.117"W	1.17
14009.00	89.600	162.100	11542.65	2697.96	-2574.40	809.00	1078821.72	731729.28	31°38'41.635"N	103°17'37.752"W	0.42
14103.00	89.900	161.100	11543.07	2791.89	-2663.59	838.67	1078851.39	731640.09	31°38'40.760"N	103°17'37.381"W	1.11
14196.00	90.700	163.400	11542.58	2884.85	-2752.15	867.02	1078879.74	731551.53	31°38'39.892"N	103°17'37.026"W	2.62
14290.00	91.000	164.800	11541.18	2978.84	-2842.54	892.76	1078905.49	731461.15	31°38'39.004"N	103°17'36.701"W	1.52
14384.00	91.100	162.600	11539.46	3072.81	-2932.75	919.14	1078931.86	731370.95	31°38'38.119"N	103°17'36.368"W	2.34
14477.00	91.100	163.400	11537.68	3165.79	-3021.66	946.33	1078959.05	731282.04	31°38'37.246"N	103°17'36.026"W	0.86
14571.00	91.100	165.200	11535.87	3259.76	-3112.14	971.76	1078984.48	731191.57	31°38'36.358"N	103°17'35.704"W	1.91
14665.00	90.400	168.600	11534.64	3353.60	-3203.67	993.06	1079005.78	731100.04	31°38'35.458"N	103°17'35.430"W	3.69
14759.00	89.800	170.800	11534.48	3447.08	-3296.15	1009.86	1079022.58	731007.57	31°38'34.548"N	103°17'35.207"W	2.43
14853.00	89.400	170.200	11535.13	3540.42	-3388.86	1025.38	1079038.09	730914.86	31°38'33.635"N	103°17'34.999"W	0.77
14947.00	89.400	168.700	11536.12	3633.94	-3481.26	1042.59	1079055.30	730822.47	31°38'32.725"N	103°17'34.772"W	1.60
15042.00	90.200	166.500	11536.45	3728.72	-3574.04	1062.98	1079075.70	730729.69	31°38'31.813"N	103°17'34.507"W	2.46
15136.00	90.000	164.500	11536.28	3822.67	-3665.04	1086.52	1079099.23	730638.70	31°38'30.918"N	103°17'34.207"W	2.14
15229.00	90.000	164.200	11536.28	3915.66	-3754.59	1111.61	1079124.32	730549.15	31°38'30.039"N	103°17'33.889"W	0.32
15323.00	90.000	164.200	11536.28	4009.66	-3845.04	1137.20	1079149.91	730458.71	31°38'29.151"N	103°17'33.566"W	0.00
15417.00	90.000	162.600	11536.28	4103.65	-3935.12	1164.05	1079176.76	730368.63	31°38'28.267"N	103°17'33.227"W	1.70
15511.00	90.000	163.400	11536.28	4197.64	-4025.01	1191.54	1079204.25	730278.75	31°38'27.385"N	103°17'32.882"W	0.85
15605.00	90.300	162.900	11536.04	4291.64	-4114.97	1218.78	1079231.49	730188.79	31°38'26.502"N	103°17'32.539"W	0.62
15699.00	90.000	164.500	11535.79	4385.64	-4205.19	1245.17	1079257.87	730098.57	31°38'25.617"N	103°17'32.206"W	1.73
15793.00	89.900	165.800	11535.87	4479.60	-4296.05	1269.26	1079281.96	730007.72	31°38'24.724"N	103°17'31.900"W	1.39
15865.00	90.000	167.500	11535.94	4551.51	-4366.10	1285.88	1079298.58	729937.67	31°38'24.035"N	103°17'31.686"W	2.37
15933.00	90.000	167.500	11535.94	4619.36	-4432.49	1300.60	1079313.30	729871.29	31°38'23.382"N	103°17'31.496"W	0.00

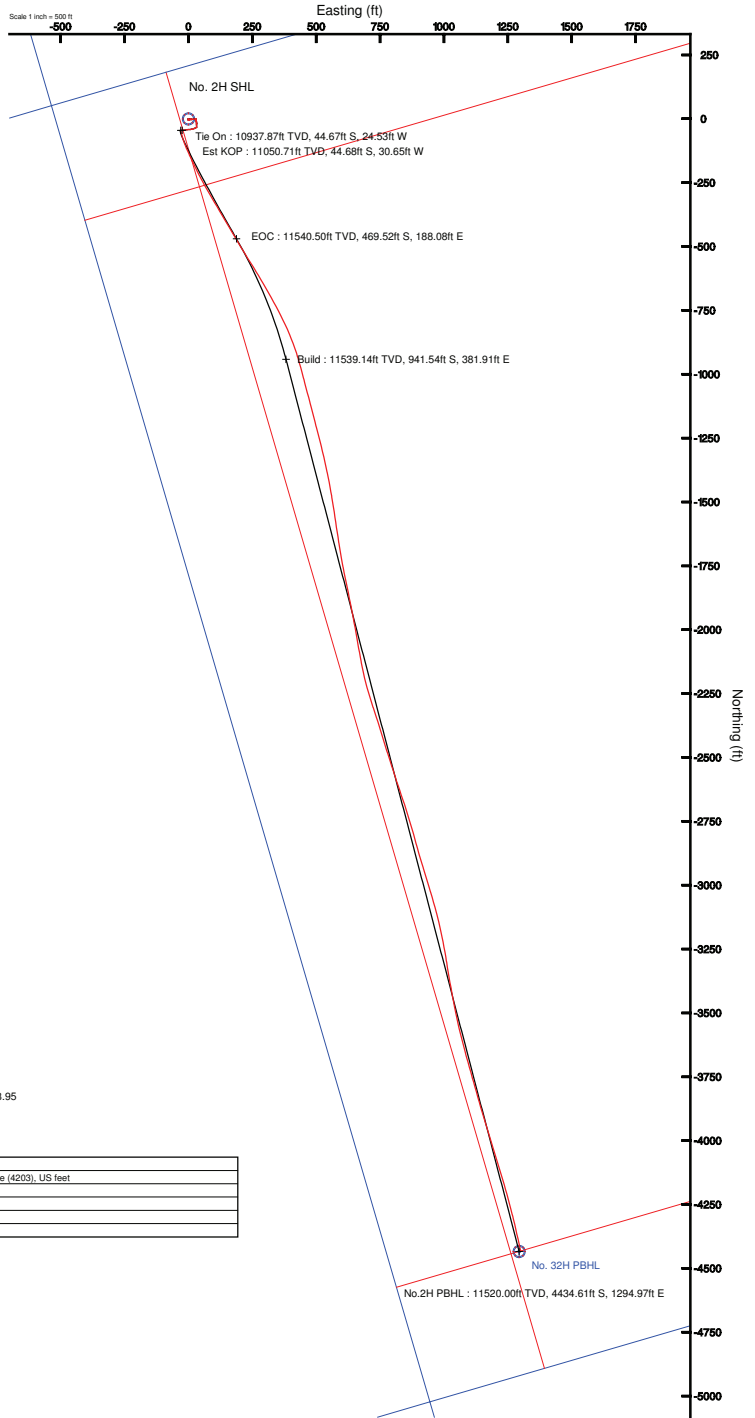
TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
		11520.00	-4434.61	1294.97	1079307.68	729869.17	31°38'23.360"N	103°17'31.560"W	point

WELLPATH COMPOSITION - Ref Wellbore: No. 2H AWP Ref Wellpath: No. 2H AWP

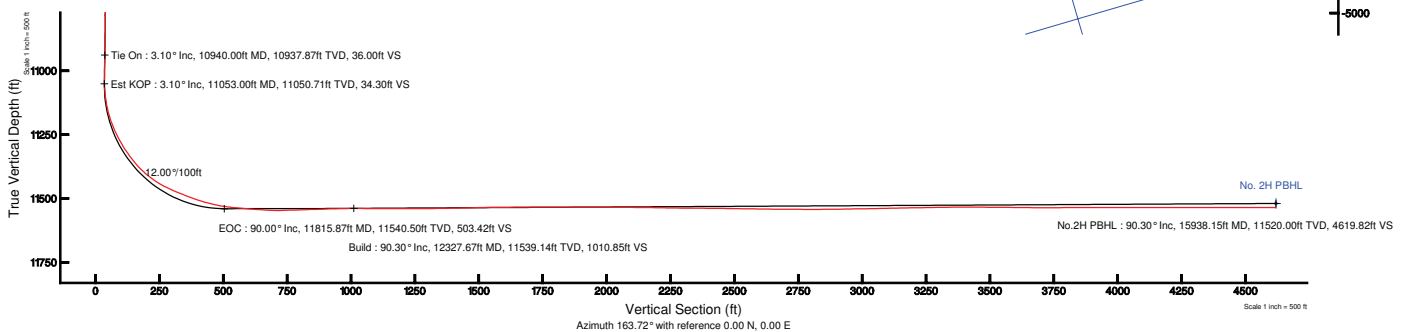
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	10900.00	Generic gyro - northseeking (Standard)	Gyro	No. 2H AWP
10900.00	15933.00	NaviTrak (Standard)	MWD < 10900 - >	No. 2H AWP

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	10940.00	3.100	269.910	10937.87	-44.67	-24.53	0.00	36.00
Est KOP	11053.00	3.100	269.910	11050.71	-44.68	-30.65	0.00	34.30
EOC	11815.87	90.000	150.000	11540.50	-469.52	188.08	12.00	503.42
Build	12327.67	90.304	165.351	11539.14	-941.54	381.91	3.00	1010.85
No.2H PBHL	15938.15	90.304	165.351	11520.00	-4434.61	1294.97	0.00	4619.82



BGGM (1945.0 to 2012.0) Dip: 59.70° Field: 48313.3 nT
Magnetic North is 7.42 degrees East of True North (at 8/30/2011)
Grid North is 1.53 degrees West of True North
To correct azimuth from True to Grid add 1.53 degrees
To correct azimuth from Magnetic to Grid add 6.95 degrees
For example: if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 8.95 = 98.95

Plot reference wellpath is Plan #2	Grid System: NAD27 / Lambert Texas SP, Central Zone (4203), US feet
True vertical depths are referenced to Rig on No. 2H SHL (KB)	North Reference: Grid north
Measured depths are referenced to Rig on No. 2H SHL (KB)	Scale: True distance
Rig on No. 2H SHL (KB) to Mean Sea Level: 2792 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot: No. 2H SHL): -2767 feet	Created by: genbry on 9/28/2011
Coordinates are in feet referenced to Slot	



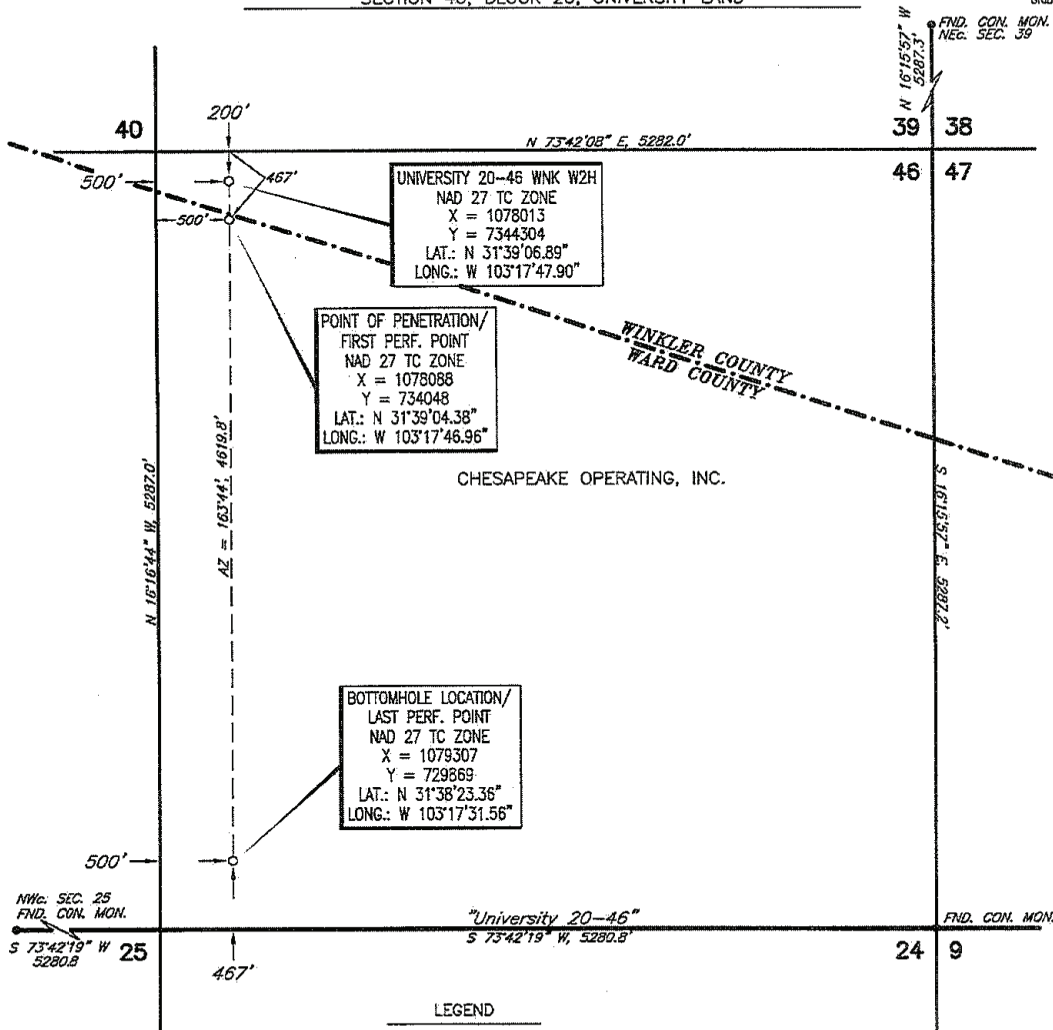
TOPOGRAPHIC

SURVEYING • MAPPING • GIS • GPS
 2903 N. BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 (800) 767-1653 • FAX (432) 682-1743

WINKLER County, Texas
 SHL: 500' FWL & 200' FNL
 POP: 500' FWL & 467' FNL
 Description: BHL: 500' FWL & 467' FSL

SECTION 46, BLOCK 20, UNIVERSITY LAND

NAD 27
 GRID BEARINGS



UNIVERSITY 20-46 WNK W2H
 NAD 27 TC ZONE
 X = 1078013
 Y = 7344304
 LAT.: N 31°39'06.89"
 LONG.: W 103°17'47.90"

POINT OF PENETRATION/
 FIRST PERF. POINT
 NAD 27 TC ZONE
 X = 1078088
 Y = 734048
 LAT.: N 31°39'04.38"
 LONG.: W 103°17'46.96"

BOTTOMHOLE LOCATION/
 LAST PERF. POINT
 NAD 27 TC ZONE
 X = 1079307
 Y = 729869
 LAT.: N 31°38'23.36"
 LONG.: W 103°17'31.56"

CHESAPEAKE OPERATING, INC.

- LEGEND
- X — = Fence
 - E — = Powerline
 - W — = Water Line
 - \\ — = Pipeline
 - = — = Lease Road

SCALE: 1" = 1000'
 0' 500' 1000'

This location has been very carefully staked on the ground according to the best official survey records, maps, and other data available to us. This plat does not in any way represent a "Boundary Survey", and does not comply with correct T.B.P.L.S. Minimum Standards of Procedures for Boundary Surveys. Lease is shown as the west half of the section and does not agree with the occupied line.

Operator **Chesapeake** OPERATING, INC. Date Staked JUNE 6, 2011
 Lease Name & Well No. UNIVERSITY 20-46 WNK W #2H Ground Elev. 2767'
 Topography & Vegetation NATURAL MESQUITE PASTURE
 Nearest Town in County ±10.6 MILES NORTHWEST OF WINK, TEXAS



Invoice #
 LO_UNIVERSITY20_46_WNK_W2H
 Y.O.P./627NE

CERTIFICATION:

I, William J. Keating, a Registered Professional Land Surveyor, and an authorized agent of Topographic Land Surveyors, do hereby certify that in my professional opinion the above described well location was surveyed and staked on the ground as shown. *This plat is for Texas Railroad Commission permitting only.*

William J. Keating
 Texas Reg. No. 5041