

**NORTHEAST NATURAL ENERGY, LLC**  
 Location: Monongalia County, WV  
 Field: Monongalia  
 Facility: Yost Pad

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AUG 12 2015

WV GEOLOGICAL SURVEY  
 MORGANTOWN, WV

VES Gyro (100'-7320') : 0.13° Inc, 100.00ft MD, 100.00ft TVD, 0.05ft VS

Plot reference wellpath is Yost 3H PWP Rev-D-0  
 True vertical depths are referenced to Pioneer 63 (RKB)  
 Measured depths are referenced to Pioneer 63 (RKB)  
 Pioneer 63 (RKB) to Mean Sea Level: 1466.2 feet  
 Mean Sea Level to Mud line (At Slot: Slot 03): -1466.2 feet  
 Coordinates are in feet referenced to Slot  
 Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (470), US feet  
 North Reference: Grid north  
 Scale: True distance  
 Depths are in feet  
 Created by: krosschr on 1/5/2015

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Yost Pad	1766284.700	416664.100	39°38'30.274"N 80°13'05.121"W
Slot 03	0.00	1766284.700	39°38'30.274"N 80°13'05.121"W
Pioneer 63 (RKB) to Mud line (At Slot: Slot 03)	18ft		
Mean Sea Level to Mud line (At Slot: Slot 03)	-1466.2ft		
Pioneer 63 (RKB) to Mean Sea Level	1466.2ft		

SGSVM (1945.0 to 2016.0) Dip: 07.02° Field: 52399.2 ft  
 Magnetic North is 0.46 degrees West of True North  
 To correct azimuth from True to Grid add 0.46 degrees  
 To correct azimuth from Magnetic to Grid subtract 0.46 degrees

API: 47-061-01673-0000  
 Rig: Pioneer 63  
 BHI Job #: 6864994  
 Duration: 12.24.2014 - 01.02.2015

BHI AT Curve <8-3/4"> (6508') : 0.40° Inc, 6617.00ft MD, 6616.20ft TVD, -67.29ft VS

MD Projected to TD: 16074' : 89.48° Inc, 16074.00ft MD, 8232.43ft TVD, 7661.44ft VS

BHI AT Curve <8-3/4"> (6508') : 0.40° Inc, 6617.00ft MD, 6616.20ft TVD, -67.29ft VS

Vertical Section (ft)  
 Azimuth 325.00° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500 ft

Scale 1 inch = 1500 ft

Yost 3H API# 47-061-01673

Lithology/Formation	Top Depth in FT Name TVD	Bottom Depth in FT TVD	Top Depth in FT MD	Bottom Depth in FT MD	Describe rock type and record quantity and type of fluid (freshwater, brine, oil, gas, H2S, etc)
Sand/Shale/Silt	0	930	0		sand/shale/silt
Limestone	930	960			limestone
Siltstone/Limestone	960	1220			siltstone/limestone
Limestone	1220	1250			limestone
Sandstone	1250	1310			sandstone
Siltstone/Limestone	1310	1410			siltstone/limestone
Sand/Silt	1410	1480			sand/silt
Sand/Shale	1480	7801			sand/shale
Middlesex	7801	7960	7853	8033	shale
Geneseo	7960	8028	8033	8085	shale
Tully	8028	8057	8085	8149	limestone
Hamilton	8057	8184	8149	8343	shale
Marcellus	8184	8255	8343		shale
Onondaga	8255	8277			limestone
Huntersville	8277	8334			chert
Oriskany	8334				sandstone

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ACTUAL WELLPATH REPORT (CSV version)  
 Prepared by Baker Hughes  
 Software System: WellArchitect® 4.0.1

REFERENCE WELLPATH IDENTIFICATION

Operator  
 Area  
 Field  
 Facility  
 Slot  
 Well  
 Wellbore  
 Wellpath  
 Sidetrack

NORTHEAST NATURAL ENERGY, LLC  
 Monongalia County, WV  
 Monongalia  
 Yost Pad  
 Slot 03  
 Yost 3H  
 Yost 3H AWB  
 Yost 3H AWP Proj:16074  
 (none)

REPORT SETUP INFORMATION

Projection System  
 North Reference  
 Scale  
 Convergence at slot  
 Software System  
 User  
 Report Generated  
 DataBase/Source file

NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet  
 Grid  
 0.999941  
 0.46° West  
 WellArchitect® 4.0.1  
 Kroschr  
 1/5/2015 at 3:03:41 PM  
 WA\_NorthEast/ev3536.xml

WELLPATH LOCATION

Slot Location  
 Facility Reference Pt  
 Field Reference Pt

Local	Nort	Local East	Easting	Northing	Latitude	Longitude
[ft]	[ft]	[US ft]	[US ft]	[ft]	[ft]	[ft]
0	0	1766285	416664.1	39°38'30.2	80°13'05.121"W	1766285
		1766285	416664.1	39°38'30.2	80°13'05.121"W	1777686
		440640.7	39°42'28.1	80°10'41.690"W		

WELLPATH DATUM

Calculation method  
 Horizontal Reference Point  
 Vertical Reference Point  
 MD Reference Point  
 Field Vertical Reference  
 Pioneer 63 (RKB) to Facility Vertical Datum  
 Pioneer 63 (RKB) to Mean Sea Level  
 Pioneer 63 (RKB) to Mud Line at Slot (Slot 03)  
 Section Origin  
 Section Azimuth

Minimum curvature  
 Slot  
 Pioneer 63 (RKB)  
 Pioneer 63 (RKB)  
 Mean Sea Level  
 18.00ft  
 1486.20ft  
 18.00ft  
 N 0.00, E 0.00 ft  
 325.00°

WELLPATH DATA † = 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	Closure Di [ft]	Closure Di DLS ["/100ft]
0	0	21.876	0	0	0	0	1766284.7	416664.1	39°38'30.274"N	80°13'05.121"W	0	0
18	0	21.876	18	0	0	0	1766284.7	416664.1	39°38'30.274"N	80°13'05.121"W	0	0
108	0.142	21.876	108	0.06	0.1	0.04	1766284.74	416664.2	39°38'30.275"N	80°13'05.120"W	0.11	21.876
208	0.073	208.325	208	0.1	0.16	0.06	1766284.76	416664.26	39°38'30.275"N	80°13'05.120"W	0.17	19.496
308	0.055	229.401	308	0.07	0.08	-0.01	1766284.69	416664.18	39°38'30.274"N	80°13'05.121"W	0.08	353.04
408	0.089	202.607	408	0.02	-0.03	-0.08	1766284.62	416664.07	39°38'30.273"N	80°13'05.122"W	0.08	249.757

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508	0.056	187.425	508	-0.06	-0.15	-0.11	1766284.59	416663.95	39°38'30.272"N	80°13'05.122"W	0.19	217.03	0.04
608	0.126	186.109	608	-0.18	-0.31	-0.13	1766284.57	416663.79	39°38'30.271"N	80°13'05.122"W	0.33	202.978	0.07
708	0.111	166.487	708	-0.35	-0.51	-0.12	1766284.58	416663.59	39°38'30.269"N	80°13'05.122"W	0.52	193.122	0.04
808	0.135	183.757	808	-0.53	-0.72	-0.1	1766284.62	416663.38	39°38'30.267"N	80°13'05.122"W	0.73	188.193	0.04
908	0.153	168.445	908	-0.75	-0.97	-0.08	1766284.64	416663.13	39°38'30.264"N	80°13'05.122"W	0.97	184.998	0.04
1008	0.115	174.305	1008	-0.96	-1.2	-0.05	1766284.65	416662.89	39°38'30.262"N	80°13'05.121"W	1.2	182.294	0.04
1108	0.161	162.21	1108	-1.18	-1.43	0	1766284.7	416662.67	39°38'30.260"N	80°13'05.121"W	1.43	179.808	0.05
1208	0.197	149.337	1208	-1.48	-1.72	0.14	1766284.84	416662.38	39°38'30.257"N	80°13'05.119"W	1.72	175.487	0.05
1308	0.065	127.245	1308	-1.71	-1.9	0.27	1766284.97	416662.2	39°38'30.255"N	80°13'05.117"W	1.92	171.954	0.14
1408	0.135	144.759	1408	-1.88	-2.03	0.38	1766285.08	416662.07	39°38'30.254"N	80°13'05.116"W	2.06	169.351	0.08
1508	0.196	171.953	1508	-2.15	-2.29	0.47	1766285.17	416661.81	39°38'30.251"N	80°13'05.114"W	2.34	168.341	0.1
1608	0.19	160.038	1608	-2.46	-2.62	0.55	1766285.25	416661.48	39°38'30.248"N	80°13'05.113"W	2.68	168.059	0.04
1708	0.217	162.186	1708	-2.8	-2.96	0.67	1766285.37	416661.15	39°38'30.245"N	80°13'05.112"W	3.03	167.255	0.03
1808	0.269	180.403	1807.99	-3.18	-3.37	0.72	1766285.42	416660.73	39°38'30.240"N	80°13'05.111"W	3.36	169.329	0.06
1908	0.329	177.938	1907.99	-3.61	-3.89	0.73	1766285.43	416660.21	39°38'30.235"N	80°13'05.111"W	4.57	169.679	0.08
2008	0.372	166.678	2007.99	-4.15	-4.49	0.82	1766285.52	416659.61	39°38'30.229"N	80°13'05.110"W	5.14	167.128	0.24
2108	0.372	128.923	2107.99	-4.76	-5.01	1.15	1766285.85	416658.88	39°38'30.222"N	80°13'05.091"W	5.69	156.585	0.74
2208	0.99	90.385	2207.98	-5.58	-5.22	2.26	1766286.96	416658.76	39°38'30.221"N	80°13'05.067"W	6.76	142.207	0.21
2308	1.172	96.293	2307.96	-6.75	-5.34	4.14	1766288.84	416658.55	39°38'30.219"N	80°13'05.037"W	8.55	130.486	0.37
2408	1.543	94.107	2407.94	-8.28	-5.55	6.5	1766291.2	416658.31	39°38'30.217"N	80°13'05.002"W	10.9	122.409	0.08
2508	1.61	95.702	2507.9	-10.04	-5.79	9.24	1766293.94	416658.31	39°38'30.213"N	80°13'04.964"W	13.72	116.824	0.28
2608	1.865	99.411	2607.85	-12.1	-6.19	12.25	1766300.19	416657.33	39°38'30.208"N	80°13'04.922"W	16.91	113.609	0.07
2708	1.918	100.822	2707.8	-14.44	-6.77	15.5	1766303.25	416656.64	39°38'30.201"N	80°13'04.883"W	19.99	111.903	0.27
2808	1.674	104.752	2807.75	-16.75	-7.46	18.55	1766305.87	416655.83	39°38'30.194"N	80°13'04.849"W	22.73	111.336	0.25
2908	1.47	109.972	2907.71	-18.92	-8.27	21.57	1766308.27	416654.92	39°38'30.185"N	80°13'04.819"W	25.29	111.286	0.04
3008	1.472	111.722	3007.68	-21.04	-9.18	23.57	1766310.47	416654.01	39°38'30.176"N	80°13'04.790"W	27.68	111.373	0.21
3108	1.262	112.973	3107.65	-23.05	-10.09	25.78	1766312.35	416653.11	39°38'30.167"N	80°13'04.766"W	29.76	111.681	0.18
3208	1.128	118.898	3207.63	-24.86	-10.99	27.65	1766314.06	416652.06	39°38'30.157"N	80°13'04.744"W	31.74	112.305	0.12
3308	1.175	124.206	3307.61	-26.71	-12.04	29.36	1766315.59	416650.83	39°38'30.145"N	80°13'04.725"W	33.62	113.255	0.21
3408	1.08	133.809	3407.59	-28.59	-13.27	30.89	1766316.76	416649.52	39°38'30.132"N	80°13'04.709"W	35.22	114.454	0.21
3508	0.941	142.944	3507.57	-30.34	-14.58	32.06	1766317.7	416648.18	39°38'30.119"N	80°13'04.697"W	36.64	115.749	0.07
3608	0.928	147.03	3607.56	-31.97	-15.92	33	1766318.59	416646.88	39°38'30.106"N	80°13'04.686"W	38.01	116.932	0.07
3708	0.88	144.096	3707.55	-33.54	-17.22	33.89	1766319.34	416645.59	39°38'30.093"N	80°13'04.676"W	39.28	118.119	0.18
3808	0.846	155.786	3807.54	-35.04	-18.51	34.64	1766319.95	416644.25	39°38'30.080"N	80°13'04.668"W	40.46	119.381	0.01
3908	0.836	155.204	3907.53	-36.48	-19.85	35.25	1766320.54	416642.91	39°38'30.067"N	80°13'04.660"W	41.64	120.599	0.04
4008	0.847	157.664	4007.51	-37.92	-21.19	35.84	1766321.14	416641.44	39°38'30.053"N	80°13'04.653"W	42.92	121.876	0.13
4108	0.976	157.446	4107.5	-39.47	-22.66	36.45	1766321.67	416639.97	39°38'30.038"N	80°13'04.646"W	44.15	123.134	0.19
4208	0.814	163.711	4207.49	-40.97	-24.13	36.97	1766322.27	416638.73	39°38'30.025"N	80°13'04.638"W	45.19	124.356	0.08
4308	0.801	169.047	4307.48	-42.29	-25.5	37.3	1766322.5	416637.5	39°38'29.996"N	80°13'04.635"W	46.19	125.574	0
4408	0.8	168.919	4407.47	-43.56	-26.87	37.57	1766322.6	416636.26	39°38'29.981"N	80°13'04.633"W	47.25	126.876	0.14
4508	0.922	173.224	4507.46	-44.91	-28.36	37.8	1766322.6	416635.02	39°38'29.967"N	80°13'04.633"W	48.28	128.262	0.12
4608	0.85	179.072	4607.45	-46.23	-29.9	37.91	1766322.6	416633.72	39°38'29.957"N	80°13'04.633"W	49.21	129.618	0.03
4708	0.849	180.921	4707.44	-47.45	-31.38	37.91	1766322.5	416632.48	39°38'29.951"N	80°13'04.634"W	50.15	131.077	0.14
4808	0.961	186.132	4807.42	-48.68	-32.95	37.81	1766322.8	416629.47	39°38'29.934"N	80°13'04.637"W	51.11	132.666	0.06
4908	0.984	189.186	4907.41	-49.93	-34.64	37.58	1766321.86	416627.72	39°38'29.917"N	80°13'04.642"W	52.01	134.394	0.17
5008	1.082	197.211	5007.39	-51.12	-36.38	37.16	1766320.95	416625.92	39°38'29.899"N	80°13'04.648"W	52.94	136.156	0.08
5108	1.055	193.212	5107.38	-52.31	-38.18	36.67	1766320.95	416624.15	39°38'29.882"N	80°13'04.653"W	53.95	137.777	0.03
5208	1.027	193.461	5207.36	-53.52	-39.95	36.25	1766320.02	416622.27	39°38'29.863"N	80°13'04.659"W	55.04	139.465	0.17
5308	1.195	195.359	5307.34	-54.78	-41.83	35.77	1766320.02	416620.44	39°38'29.845"N	80°13'04.665"W	56.16	141.027	0.24
5408	0.971	191.48	5407.32	-56.03	-43.66	35.32	1766319.68	416618.75	39°38'29.828"N	80°13'04.669"W	57.28	142.359	0.04
5508	1.009	191.455	5507.31	-57.22	-45.36	34.98	1766319.21	416617.05	39°38'29.811"N	80°13'04.675"W	58.35	143.74	0.14
5608	1.009	199.546	5607.29	-58.34	-47.05	34.51	1766318.64	416615.46	39°38'29.796"N	80°13'04.682"W	59.31	145.087	0.09
5708	0.923	199.58	5707.28	-59.31	-48.64	33.95							

5808	0.877	200.986	5807.27	-60.21	-50.11	33.4	1766318.1	416613.99	39°38'29.781"N	80°13'04.689"W	60.22	146.314	0.05
5908	0.842	191.331	5907.25	-61.14	-51.55	32.98	1766317.68	416612.56	39°38'29.767"N	80°13'04.694"W	61.2	147.385	0.15
6008	0.807	195.889	6007.24	-62.1	-52.94	32.65	1766317.35	416611.16	39°38'29.753"N	80°13'04.698"W	62.2	148.341	0.07
6108	0.851	197.311	6107.23	-62.99	-54.33	32.23	1766316.93	416609.34	39°38'29.739"N	80°13'04.703"W	63.17	149.32	0.05
6208	0.848	193.371	6207.22	-63.94	-55.76	31.84	1766316.54	416608.34	39°38'29.725"N	80°13'04.708"W	64.21	150.272	0.06
6308	0.779	190.707	6307.21	-64.91	-57.15	31.54	1766316.24	416606.96	39°38'29.711"N	80°13'04.712"W	65.28	151.102	0.08
6408	0.571	187.703	6407.2	-65.75	-58.31	31.35	1766316.05	416605.79	39°38'29.700"N	80°13'04.714"W	66.2	151.735	0.21
6508	0.52	174.194	6507.2	-66.51	-59.25	31.33	1766316.03	416604.85	39°38'29.691"N	80°13'04.713"W	67.03	152.133	0.14
6617	0.4	169.38	6616.2	-67.29	-60.12	31.45	1766316.15	416603.98	39°38'29.682"N	80°13'04.713"W	67.85	152.385	0.12
6680	0.17	158.26	6679.2	-67.58	-60.42	31.53	1766316.22	416603.68	39°38'29.679"N	80°13'04.712"W	68.15	152.447	0.37
6806	5.43	166.92	6742.19	-68	-60.81	31.72	1766316.42	416603.33	39°38'29.675"N	80°13'04.709"W	68.58	152.453	0.7
6870	10.55	158.48	6805.09	-71.1	-64.01	32.55	1766317.25	416600.13	39°38'29.644"N	80°13'04.698"W	71.81	153.046	7.69
6933	14.18	146.59	6929.99	-79.61	-72.41	35.39	1766320.08	416591.69	39°38'29.561"N	80°13'04.661"W	80.6	153.957	8.19
6996	16.87	142.7	6990.68	-84.23	-74.1	41.75	1766326.45	416579.88	39°38'29.445"N	80°13'04.578"W	94.01	153.631	7.01
7060	20.44	142.88	7051.31	-109.79	-97.94	51.54	1766336.24	416566.16	39°38'29.310"N	80°13'04.452"W	110.68	152.244	4.58
7123	23.56	142.99	7109.72	-153.83	-133.08	63.92	1766348.62	416549.86	39°38'29.150"N	80°13'04.292"W	130.91	150.773	5.58
7186	26.37	142.54	7166.83	-180.4	-154.24	78.14	1766362.84	416531.03	39°38'28.965"N	80°13'04.108"W	154.32	149.579	4.95
7248	28.82	142.34	7221.77	-209.09	-177	111.74	1766378.93	416509.87	39°38'28.757"N	80°13'03.900"W	180.75	148.577	4.47
7312	30.44	141.96	7277.4	-240.69	-201.99	131.16	1766415.85	416487.11	39°38'28.533"N	80°13'03.674"W	209.32	147.736	3.95
7375	24.17	143.88	7333.35	-269.55	-225	148.61	1766433.3	416439.12	39°38'28.062"N	80°13'03.198"W	240.83	147.003	2.55
7438	20.31	145.33	7391.65	-293.38	-244.42	162.44	1766447.13	416419.7	39°38'27.871"N	80°13'03.019"W	269.65	146.555	10.05
7501	16.02	147.08	7451.5	-313.01	-260.71	173.39	1766458.08	416403.4	39°38'27.711"N	80°13'02.878"W	293.47	146.392	6.19
7564	9.86	150.76	7512.87	-327.08	-272.73	180.76	1766465.44	416391.39	39°38'27.593"N	80°13'02.782"W	327.19	146.465	9.86
7627	4.79	155.23	7575.34	-335.04	-279.83	184.49	1766469.59	416384.29	39°38'27.523"N	80°13'02.734"W	335.17	146.603	8.09
7689	1.27	160.03	7637.27	-337.3	-282.3	184.9	1766466.58	416381.82	39°38'27.498"N	80°13'02.728"W	337.46	146.776	8.48
7752	6.68	316.51	7700.1	-333.38	-279.76	181.69	1766466.38	416384.36	39°38'27.523"N	80°13'02.770"W	333.58	146.998	9.64
7816	10.54	319.59	7763.37	-323.87	-272.6	175.33	1766460.02	416391.52	39°38'27.594"N	80°13'02.852"W	324.12	147.252	6.07
7879	14.77	322.46	7824.83	-310.1	-261.84	166.7	1766445.39	416402.28	39°38'27.699"N	80°13'02.963"W	310.4	147.517	6.79
7942	18.61	322.2	7885.16	-292.03	-247.52	155.64	1766440.33	416416.59	39°38'27.840"N	80°13'03.106"W	292.39	147.839	6.1
8005	24.89	318	7943.65	-268.81	-229.71	140.59	1766425.28	416434.41	39°38'28.015"N	80°13'03.300"W	269.32	148.531	10.26
8069	33.17	317.41	7999.56	-238.03	-206.77	119.7	1766404.39	416457.34	39°38'28.240"N	80°13'03.570"W	238.92	149.934	12.95
8132	40.08	319.26	8050.09	-200.72	-178.68	94.76	1766379.46	416485.43	39°38'28.515"N	80°13'03.891"W	202.26	152.06	11.11
8195	46.7	320.68	8095.85	-157.63	-145.54	66.97	1766351.67	416518.57	39°38'28.841"N	80°13'04.250"W	160.21	155.291	10.62
8257	54.13	322.12	8135.33	-109.98	-108.21	37.21	1766321.91	416555.9	39°38'29.207"N	80°13'04.634"W	114.42	161.024	12.12
8321	61.37	323.9	8169.46	-55.92	-64.98	4.69	1766289.39	416599.12	39°38'29.632"N	80°13'05.054"W	65.15	175.871	11.55
8384	66.79	324.74	8196.99	0.71	-18.97	-28.34	1766256.36	416645.13	39°38'30.084"N	80°13'05.481"W	34.1	236.199	8.69
8448	71.06	325.76	8220	60.42	30.09	-62.36	1766222.34	416694.19	39°38'30.566"N	80°13'05.921"W	69.24	295.758	6.84
8511	75.47	326.57	8238.14	120.72	80.19	-95.94	1766188.76	416744.29	39°38'31.059"N	80°13'06.355"W	125.04	309.891	7.11
8574	79.21	327.42	8251.94	182.14	131.74	-129.42	1766155.29	416795.83	39°38'31.565"N	80°13'06.788"W	184.67	315.509	6.08
8637	83.56	327.8	8261.38	244.35	184.32	-162.77	1766121.94	416848.41	39°38'32.082"N	80°13'07.220"W	245.91	318.552	6.93
8700	89.88	327.06	8264.98	307.16	237.3	-231.29	1766088.1	416901.38	39°38'32.603"N	80°13'07.658"W	308.17	320.356	10.1
8763	89.63	326.16	8265.25	370.13	289.9	-231.29	1766053.43	416953.98	39°38'33.120"N	80°13'08.107"W	370.86	321.417	1.48
8826	88.83	324.82	8266.09	433.12	341.81	-266.97	1766017.74	417005.89	39°38'33.631"N	80°13'08.568"W	433.71	322.008	2.48
8889	88.71	323.09	8267.45	496.09	392.73	-304.04	1765980.68	417056.81	39°38'34.131"N	80°13'09.047"W	496.66	322.255	2.75
8953	88.61	322.21	8268.94	560.02	443.59	-342.85	1765941.87	417107.67	39°38'34.630"N	80°13'09.549"W	560.65	322.3	1.38
9016	88.34	321.89	8270.62	622.92	493.25	-381.58	1765903.14	417157.32	39°38'35.118"N	80°13'10.552"W	623.62	322.274	0.66
9079	88.15	321.62	8272.55	685.79	542.71	-420.56	1765864.16	417206.78	39°38'35.604"N	80°13'10.552"W	686.59	322.227	0.52
9142	88.06	320.41	8274.63	748.6	591.65	-460.17	1765824.55	417255.72	39°38'36.084"N	80°13'11.064"W	749.54	322.125	1.92
9205	88.12	320.19	8276.73	811.35	640.1	-500.39	1765784.34	417304.16	39°38'36.560"N	80°13'11.583"W	812.48	321.984	0.36
9269	88.62	318.98	8278.55	875.04	688.8	-541.87	1765742.86	417352.86	39°38'37.038"N	80°13'12.118"W	876.4	321.809	2.04
9333	88.43	320.16	8280.2	938.73	737.5	-583.36	1765701.38	417401.56	39°38'37.516"N	80°13'12.653"W	940.33	321.656	1.87
9396	88.43	326.39	8281.93	1001.65	787.96	-621	1765663.74	417452.01	39°38'38.012"N	80°13'13.140"W	1003.25	321.758	9.89

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9460	87.69	332.26	8284.1	1065.4	842.94	-653.62	1765631.12	417506.99	39°38'38.552"N	80°13'13.562"W	1066.66	322.21	9.24
9523	87.6	331.25	8286.69	1127.91	898.4	-683.41	1765601.34	417562.44	39°38'39.098"N	80°13'13.949"W	1128.79	322.74	1.61
9587	87.66	328.3	8289.33	1191.62	953.64	-715.59	1765569.15	417617.68	39°38'39.642"N	80°13'14.366"W	1192.27	323.116	4.61
9649	87.69	330.27	8291.85	1253.4	1006.9	-747.23	1765537.51	417670.94	39°38'40.165"N	80°13'14.776"W	1253.87	323.42	3.18
9712	87.54	330.22	8294.47	1316.08	1061.54	-778.47	1765506.28	417725.58	39°38'40.703"N	80°13'15.181"W	1316.39	323.746	0.25
9776	88.31	329.55	8296.79	1379.8	1116.87	-810.56	1765474.19	417780.99	39°38'41.247"N	80°13'15.596"W	1380	324.03	1.59
9838	88.03	328.27	8298.77	1441.63	1169.93	-842.56	1765442.19	417833.96	39°38'41.769"N	80°13'16.011"W	1441.75	324.239	2.11
9901	88.34	325.59	8300.76	1504.55	1222.7	-876.92	1765407.84	417886.72	39°38'42.288"N	80°13'16.456"W	1504.65	324.352	4.28
9964	88.46	325.07	8302.52	1567.53	1274.49	-912.74	1765372.02	417938.51	39°38'42.797"N	80°13'16.919"W	1567.62	324.391	0.85
10027	88.25	324.33	8304.33	1630.5	1325.89	-949.13	1765335.63	417989.99	39°38'43.302"N	80°13'17.389"W	1630.59	324.403	1.22
10090	88.49	325.59	8306.12	1693.47	1377.44	-985.29	1765299.47	418041.46	39°38'43.808"N	80°13'17.857"W	1693.56	324.424	2.04
10153	88.19	326.57	8307.95	1756.43	1429.7	-1020.43	1765264.34	418093.71	39°38'44.322"N	80°13'18.311"W	1756.51	324.483	1.63
10217	88.15	327.89	8309.99	1820.35	1483.49	-1055.05	1765229.72	418147.5	39°38'44.851"N	80°13'18.759"W	1820.4	324.58	2.06
10279	87.97	329.79	8312.09	1882.17	1536.51	-1087.11	1765197.66	418200.51	39°38'45.372"N	80°13'19.175"W	1882.2	324.72	3.08
10342	87.72	329.1	8314.46	1944.94	1590.72	-1119.11	1765165.65	418254.72	39°38'45.906"N	80°13'19.589"W	1944.95	324.873	1.16
10405	88.28	328.41	8316.66	2007.77	1644.55	-1151.77	1765133	418308.55	39°38'46.435"N	80°13'20.012"W	2007.77	324.994	1.41
10468	88.25	330.75	8318.57	2070.53	1698.85	-1183.65	1765101.12	418362.85	39°38'46.969"N	80°13'20.426"W	2070.54	325.134	3.71
10531	88.12	330.72	8320.56	2133.19	1753.78	-1214.44	1765070.34	418417.77	39°38'47.509"N	80°13'20.825"W	2133.21	325.299	0.21
10594	88.28	324.97	8322.54	2196.05	1807.07	-1247.94	1765036.84	418471.06	39°38'48.033"N	80°13'21.258"W	2196.1	325.372	9.13
10657	88.49	326.51	8324.32	2259.02	1859.12	-1283.39	1765001.39	418523.1	39°38'48.545"N	80°13'21.717"W	2259.07	325.382	2.47
10720	88.52	328.22	8325.96	2321.94	1912.15	-1317.35	1764967.43	418576.13	39°38'49.066"N	80°13'22.157"W	2322.01	325.436	2.71
10783	88.65	326.42	8327.52	2384.87	1965.16	-1351.35	1764933.43	418629.14	39°38'49.587"N	80°13'22.597"W	2384.95	325.485	2.86
10846	89.2	321.5	8328.7	2447.83	2016.07	-1388.4	1764896.38	418680.05	39°38'50.088"N	80°13'23.076"W	2447.9	325.446	7.86
10909	89.26	317.97	8329.55	2510.54	2064.14	-1429.11	1764865.68	418728.11	39°38'50.559"N	80°13'23.601"W	2510.58	325.303	5.6
10971	89.32	314.86	8330.32	2571.84	2109.04	-1471.85	1764842.94	418773.01	39°38'51.000"N	80°13'24.152"W	2571.84	325.09	5.02
11035	89.39	314.02	8331.04	2634.75	2153.84	-1517.54	1764817.81	418817.81	39°38'51.439"N	80°13'24.741"W	2634.76	324.833	1.32
11098	89.42	316.14	8331.69	2696.8	2198.45	-1562.02	1764772.78	418862.41	39°38'51.876"N	80°13'25.314"W	2696.86	324.606	3.37
11161	89.48	318.39	8332.3	2759.22	2244.72	-1604.77	1764680.03	418908.68	39°38'52.330"N	80°13'25.865"W	2759.35	324.439	3.57
11224	89.54	318.63	8332.83	2821.81	2291.91	-1646.5	1764638.3	418955.87	39°38'52.793"N	80°13'26.404"W	2822.02	324.307	0.39
11287	89.6	320.8	8333.31	2884.54	2339.96	-1687.23	1764597.57	419003.92	39°38'53.265"N	80°13'26.929"W	2884.82	324.206	3.45
11350	89.72	323.5	8333.68	2947.46	2389.7	-1725.88	1764558.92	419053.66	39°38'53.753"N	80°13'27.428"W	2947.77	324.163	4.29
11413	89.78	326.21	8333.96	3010.45	2441.21	-1762.15	1764522.66	419105.16	39°38'54.259"N	80°13'27.897"W	3010.76	324.177	4.3
11476	90.22	328.34	8333.96	3073.4	2494.21	-1796.2	1764488.61	419158.16	39°38'54.780"N	80°13'28.338"W	3073.67	324.24	3.45
11539	89.72	330	8333.99	3136.23	2548.3	-1828.49	1764466.32	419212.25	39°38'55.313"N	80°13'28.756"W	3136.44	324.339	2.75
11601	90.09	329.54	8334.09	3198.01	2601.87	-1859.7	1764445.11	419265.81	39°38'55.839"N	80°13'29.161"W	3198.16	324.444	0.95
11665	90	328.64	8334.04	3261.85	2656.78	-1892.58	1764392.24	419320.72	39°38'56.379"N	80°13'29.587"W	3261.95	324.536	1.41
11728	89.94	325.97	8334.07	3324.79	2709.8	-1926.61	1764358.21	419373.73	39°38'56.901"N	80°13'30.027"W	3324.88	324.588	4.24
11791	89.97	325.19	8334.12	3387.79	2761.77	-1962.22	1764322.6	419425.7	39°38'57.411"N	80°13'30.488"W	3387.87	324.606	1.24
11854	90.09	326.14	8334.09	3450.78	2813.79	-1997.75	1764287.07	419477.71	39°38'57.923"N	80°13'30.948"W	3450.86	324.626	1.52
11918	89.88	326.69	8334.11	3514.76	2867.1	-2033.15	1764251.67	419531.03	39°38'58.447"N	80°13'31.406"W	3514.83	324.658	0.92
11981	89.85	324.23	8334.26	3577.76	2918.99	-2068.87	1764215.96	419582.92	39°38'58.957"N	80°13'31.868"W	3577.81	324.672	3.91
12044	90.34	323.07	8334.15	3640.74	2969.73	-2106.21	1764178.62	419633.65	39°38'59.455"N	80°13'32.350"W	3640.8	324.655	2
12107	90.4	321.99	8333.74	3703.68	3019.73	-2144.54	1764140.3	419683.65	39°38'59.946"N	80°13'32.845"W	3703.76	324.619	1.72
12170	90.77	323.18	8333.1	3766.62	3069.77	-2182.81	1764102.02	419733.68	39°39'00.438"N	80°13'33.340"W	3766.71	324.585	1.98
12234	90.95	325.6	8332.14	3830.6	3121.79	-2220.07	1764064.77	419785.7	39°39'00.949"N	80°13'33.822"W	3830.7	324.581	3.79
12298	91.05	326.33	8331.02	3894.58	3174.82	-2255.88	1764028.95	419838.72	39°39'01.470"N	80°13'34.285"W	3894.67	324.604	1.15
12361	91.51	324.95	8329.62	3957.56	3226.81	-2291.43	1763993.41	419890.71	39°39'01.981"N	80°13'34.745"W	3957.65	324.621	2.31
12423	91.26	325.07	8328.12	4019.54	3277.59	-2326.97	1763957.87	419941.49	39°39'02.480"N	80°13'35.204"W	4019.63	324.627	0.45
12486	91.54	322.98	8326.58	4082.51	3328.56	-2363.97	1763920.88	419992.45	39°39'02.981"N	80°13'35.683"W	4082.6	324.617	3.35
12549	91.26	327.8	8325.04	4145.47	3380.38	-2399.73	1763885.12	420044.27	39°39'03.490"N	80°13'36.145"W	4145.56	324.629	7.66
12613	90.96	331.27	8323.8	4209.25	3435.52	-2432.17	1763852.68	420099.41	39°39'04.032"N	80°13'36.566"W	4209.3	324.704	5.44
12676	90.74	331.47	8322.86	4271.85	3490.81	-2462.35	1763822.5	420154.7	39°39'04.576"N	80°13'36.957"W	4271.88	324.802	4.47
12740	90.95	326.22	8321.92	4335.68	3545.56	-2495.45	1763789.41	420209.44	39°39'05.115"N	80°13'37.386"W	4335.69	324.861	8.21

12803	90.8	328.16	8320.96	4398.62	3598.5	-2529.58	1763755.28	420262.38	39°39'05.635"N	80°13'37.828"W	4398.63	324.895	3.09
12866	90.55	328.07	8320.21	4451.53	3651.99	-2562.85	1763722	420315.86	39°39'06.161"N	80°13'38.259"W	4461.53	324.94	0.42
12929	90.68	326.48	8319.54	4524.47	3704.98	-2596.91	1763687.95	420368.86	39°39'06.682"N	80°13'38.700"W	4524.47	324.973	2.53
12992	91.14	324.45	8318.54	4587.46	3756.87	-2632.62	1763652.24	420402.74	39°39'07.192"N	80°13'39.162"W	4587.46	324.979	3.3
13055	91.26	323.02	8317.22	4650.43	3807.66	-2669.87	1763614.99	420474.52	39°39'07.691"N	80°13'39.643"W	4650.43	324.962	2.92
13119	91.29	324.89	8315.79	4714.4	3859.39	-2707.52	1763577.34	420523.25	39°39'08.199"N	80°13'40.130"W	4714.4	324.949	2.28
13181	91.32	326.36	8314.38	4776.37	3910.55	-2742.52	1763542.35	420574.41	39°39'08.702"N	80°13'40.582"W	4776.38	324.958	2.37
13244	91.2	324.65	8313	4839.35	3962.45	-2778.19	1763506.68	420626.31	39°39'09.212"N	80°13'41.044"W	4839.36	324.965	2.72
13308	91.57	322.46	8311.45	4903.31	4013.92	-2816.19	1763468.68	420677.77	39°39'09.718"N	80°13'41.535"W	4903.31	324.946	3.47
13371	91.54	321.87	8309.74	4966.21	4063.66	-2854.82	1763430.05	420727.51	39°39'10.206"N	80°13'42.034"W	4966.22	324.911	0.94
13434	92.37	322.48	8307.59	5029.1	4113.39	-2893.43	1763391.44	420777.24	39°39'10.695"N	80°13'42.533"W	5029.11	324.877	1.63
13497	92.5	325.17	8304.91	5092.02	4164.19	-2930.58	1763354.3	420828.04	39°39'11.194"N	80°13'43.013"W	5092.04	324.864	4.27
13560	92.99	326.2	8301.9	5154.94	4216.17	-2966.06	1763318.83	420880.01	39°39'11.704"N	80°13'43.472"W	5154.96	324.874	1.81
13624	92.89	323.82	8298.61	5218.85	4268.53	-3002.7	1763282.18	420932.37	39°39'12.219"N	80°13'43.946"W	5218.87	324.875	3.72
13687	92.93	323.61	8295.41	5281.76	4319.25	-3039.94	1763244.95	420983.08	39°39'12.717"N	80°13'44.427"W	5281.77	324.862	0.34
13749	92.89	322.37	8292.27	5343.64	4368.69	-3077.21	1763207.68	421032.52	39°39'13.203"N	80°13'44.909"W	5343.66	324.84	2
13813	92.93	321.3	8289.02	5407.46	4418.94	-3116.71	1763168.18	421082.77	39°39'13.696"N	80°13'45.419"W	5407.49	324.804	1.67
13875	92.46	321.43	8286.1	5469.26	4467.32	-3155.38	1763129.52	421131.15	39°39'14.171"N	80°13'45.918"W	5469.31	324.766	0.79
13938	92.16	320.11	8283.56	5532.04	4516.08	-3195.19	1763089.71	421179.9	39°39'14.650"N	80°13'46.433"W	5532.11	324.72	2.15
14002	92.16	317.8	8281.15	5595.63	4564.31	-3237.18	1763047.72	421228.13	39°39'15.123"N	80°13'46.974"W	5595.74	324.654	3.61
14065	92	320.69	8278.86	5658.27	4612	-3278.28	1763006.63	421275.82	39°39'15.591"N	80°13'47.505"W	5658.41	324.594	4.59
14128	92.09	325.99	8276.61	5721.18	4662.49	-3315.85	1762969.05	421326.3	39°39'16.087"N	80°13'48.009"W	5721.33	324.58	8.41
14190	91.94	331.17	8274.43	5783	4715.34	-3348.14	1762936.76	421379.16	39°39'16.607"N	80°13'48.409"W	5783.12	324.623	8.35
14253	91.81	330.13	8272.37	5845.66	4770.23	-3379.01	1762905.9	421434.03	39°39'17.147"N	80°13'48.809"W	5845.75	324.688	1.66
14317	91.54	327.47	8270.5	5909.49	4824.94	-3412.14	1762872.77	421488.75	39°39'17.685"N	80°13'49.238"W	5909.55	324.733	4.18
14380	91.48	326.56	8268.84	5972.42	4877.77	-3446.43	1762838.48	421541.57	39°39'18.204"N	80°13'49.682"W	5972.48	324.757	1.45
14442	91.91	326.05	8267.01	6034.38	4929.33	-3480.81	1762804.1	421593.13	39°39'18.711"N	80°13'50.127"W	6034.4	324.772	1.08
14505	92.06	324.94	8264.82	6097.34	4981.21	-3516.47	1762768.44	421645.01	39°39'19.221"N	80°13'50.589"W	6097.38	324.78	1.78
14569	92.56	325.14	8262.24	6161.29	5033.62	-3553.12	1762731.8	421697.41	39°39'19.736"N	80°13'51.062"W	6161.33	324.783	0.84
14632	92.52	327.49	8259.45	6224.2	5085.99	-3588.02	1762696.9	421749.78	39°39'20.251"N	80°13'51.514"W	6224.24	324.798	3.73
14695	92.89	330.43	8256.48	6286.98	5139.9	-3620.47	1762664.45	421803.69	39°39'20.781"N	80°13'51.935"W	6287	324.84	4.7
14759	92.93	329.71	8253.23	6350.64	5195.3	-3652.36	1762632.57	421859.08	39°39'21.326"N	80°13'52.348"W	6350.65	324.892	1.13
14822	92.93	327.63	8250.01	6413.43	5249.04	-3685.07	1762599.85	421912.81	39°39'21.854"N	80°13'52.772"W	6413.43	324.929	3.3
14885	92.64	325.77	8246.95	6476.32	5301.63	-3719.62	1762565.31	421965.4	39°39'22.371"N	80°13'53.219"W	6476.33	324.947	2.98
14948	92.8	323.6	8243.96	6539.25	5352.97	-3755.99	1762528.94	422016.75	39°39'22.876"N	80°13'53.690"W	6539.25	324.944	3.45
15011	92.31	324.22	8241.15	6602.17	5403.83	-3793.07	1762491.87	422067.6	39°39'23.375"N	80°13'54.169"W	6602.18	324.934	1.25
15074	91.97	323.42	8238.8	6665.12	5454.65	-3830.23	1762454.7	422118.41	39°39'23.874"N	80°13'54.649"W	6665.12	324.924	1.38
15137	91.66	324.29	8236.8	6728.07	5505.5	-3867.37	1762417.57	422169.26	39°39'24.374"N	80°13'55.129"W	6728.08	324.914	1.47
15201	91.63	326.73	8234.96	6792.04	5558.22	-3903.59	1762381.35	422219.98	39°39'24.892"N	80°13'55.598"W	6792.04	324.919	3.81
15264	90.99	323.75	8233.52	6855.01	5609.96	-3939.5	1762345.44	422273.71	39°39'25.400"N	80°13'56.063"W	6855.02	324.922	4.84
15327	91.02	325.47	8232.42	6918	5661.31	-3975.98	1762308.97	422325.06	39°39'25.905"N	80°13'56.534"W	6918.01	324.919	2.73
15390	90.22	323.79	8231.74	6980.99	5712.67	-4012.44	1762272.45	422376.42	39°39'26.410"N	80°13'57.006"W	6981	324.917	2.95
15453	90.28	321.89	8231.46	7043.94	5762.88	-4050.49	1762234.45	422426.63	39°39'26.903"N	80°13'57.498"W	7043.95	324.898	3.02
15517	90.49	322.71	8231.03	7107.87	5813.52	-4089.63	1762193.32	422477.26	39°39'27.397"N	80°13'58.003"W	7107.89	324.875	1.32
15579	90.03	323.27	8230.75	7169.83	5863.02	-4126.95	1762158	422526.77	39°39'27.886"N	80°13'58.486"W	7169.85	324.858	1.17
15642	90	323.78	8230.73	7232.81	5913.68	-4164.4	1762120.55	422577.42	39°39'28.384"N	80°13'58.970"W	7232.84	324.847	0.81
15705	89.94	323.54	8230.77	7295.79	5964.43	-4201.74	1762083.22	422628.17	39°39'28.882"N	80°13'59.452"W	7295.82	324.837	0.39
15768	89.94	323.16	8230.83	7358.77	6014.98	-4239.34	1762045.62	422678.71	39°39'29.379"N	80°13'59.938"W	7358.8	324.824	0.6
15831	90	323.32	8230.86	7421.74	6065.45	-4277.04	1762007.92	422729.18	39°39'29.875"N	80°14'00.426"W	7421.78	324.81	0.27
15895	89.82	318.67	8230.97	7485.56	6115.17	-4317.31	1761967.65	422778.89	39°39'30.363"N	80°14'00.946"W	7485.62	324.778	7.27
15962	89.42	312.71	8231.41	7551.65	6163.09	-4364.09	1761920.87	422826.81	39°39'30.833"N	80°14'01.549"W	7551.75	324.698	8.92
16021	89.51	312.88	8231.96	7609.31	6203.17	-4407.39	1761877.58	422866.89	39°39'31.225"N	80°14'02.107"W	7609.49	324.606	0.33
16052	89.48	315.4	8232.23	7639.75	6224.76	-4429.63	1761855.34	422888.48	39°39'31.437"N	80°14'02.393"W	7639.97	324.564	8.13

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HOLE AND CASING SECTIONS Ref Wellbore: Yost 3H AWB Ref Wellpath: Yost 3H AWP Proj:16074

String/Diameter

Start MD (ft)	End MD (ft)	Interval (ft)	Start TVD (ft)	End TVD (ft)	Start N/S (ft)	Start E/W (ft)	End N/S (ft)	End E/W (ft)	Comment
18	1458	1440	18	1458	0	0	-2.14	0.44	
18	2646	2628	18	2645.83	0	0	-6.4	13.47	

T A R G E T S

Name	MD (ft)	TVD (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Shape	Comment
Yost 3H LP Rev-6	8263	203.23	-177.02	1766108	416867.3	39°38'32.2	80°13'07.404"	W	point	
Yost 3H PBHL Rev-4	8263	6260.08	-4418.07	1761867	422923.8	39°39'31.7	80°14'02.249"	W	point	
UB1	8500	790.39	-998.06	1765287	417454.4	39°38'38.0	80°13'17.960"	W	point	
UB2	8500	907.17	-934.39	1765350	417571.2	39°38'39.1	80°13'17.158"	W	point	
UB3	8500	1074.49	-814.12	1765471	417738.5	39°38'40.8	80°13'15.638"	W	point	
UB4	8500	1671.37	-1773.18	1764512	418335.4	39°38'46.6	80°13'27.959"	W	point	
UB5	8500	1853.15	-1628.73	1764656	418517.1	39°38'48.4	80°13'26.131"	W	point	
UB6	8500	6065.92	-4999.34	1761286	422729.7	39°39'29.8	80°14'09.661"	W	point	
UB7	8500	6295.33	-4465.88	1761819	422959	39°39'32.1	80°14'02.864"	W	point	
UB8	8500	6402.64	-4140.52	1762144	423066.4	39°39'33.2	80°13'58.715"	W	point	

WELLPATH COMPOSITION Ref Wellbore: Yost 3H AWB Ref Wellpath: Yost 3H AWP Proj:16074

Log Name/Comment	Start MD (ft)	End MD (ft)	Pos Unc Model
01_VES Gyro (100'-7320')	18	6508	Generic Gyro - northseeking (Standard)
02_BHI AT Curve <8-3/4"> (6508')	6508	16052	Navitrak (AT Curve Short Spaced)
Projection to bit	16052	16074	Blind Drilling (std)

C O M M E N T S

Wellpath general comments

API:

Rig: Pioneer 63

BHI Job#:

Duration:

VES Gyro (100'-7320')

BHI AT Curve <8-3/4"> (6508') (6617'- 16052)''

MD Projected to TD: 16074'

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