



Job Number: SVPA-140078  
 Company: Chesapeake Appalachia, LLC.  
 Lease/Well: Robert Young MSH 3H (API 475101727)  
 Location: Marshall County, WV  
 Rig Name: Nomac #337  
 RKB: 22'  
 G.L. or M.S.L.: GL

State/Country: West Virginia/USA  
 Declination: -8.71°  
 Grid: West To Grid North  
 File name: S:\2014SU-1\CHESAP-1\PAIROBERT-1\3H.SVY  
 Date/Time: 12-Mar-14 / 17:09  
 Curve Name: Surface - 725' M.D. (SRG)

**MS SURVEY**

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane 312.37  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

RECEIVED  
 Office of Oil and Gas

APR 04 2014

WV Department of  
 Environmental Protection

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth			Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
				N-S FT	E-W FT		Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.14	145.07	100.00	-.10	.07	-.12	.12	145.06	.14
200.00	.62	146.12	200.00	-.65	.44	-.76	.79	145.79	.48
300.00	.40	166.29	299.99	-1.44	.83	-1.58	1.66	150.13	.28
400.00	.09	78.20	399.99	-1.76	.99	-1.91	2.02	150.77	.41
500.00	.26	178.34	499.99	-1.97	1.07	-2.12	2.24	151.53	.29
600.00	.26	179.95	599.99	-2.43	1.08	-2.43	2.65	156.08	.01
700.00	.28	181.98	699.99	-2.90	1.07	-2.74	3.09	159.77	.02
<b>Last Survey Depth Recorded</b>									
725.00	.21	255.89	724.99	-2.97	1.02	-2.75	3.14	161.02	1.20



**Weatherford®**

## Drilling Services

---

## EOW Summary

---



**CHESAPEAKE ENERGY**

WELL: ROBERT YOUNG MSH 3H

MARSHALL COUNTY, WV

---

Prepared by: COREY JACOBS

Submitted: MARCH 21, 2014

RECEIVED  
Office of Oil and Gas

APR 04 2016

---

WV Department of  
Environmental Protection

**Weatherford International Ltd.**  
100 Vista Drive  
Charlertoi, PA 15022 USA  
+1.724.239.1400 Main  
+1.724.239.1403 Fax  
[www.weatherford.com](http://www.weatherford.com)



# FINAL SURVEYS

---

RECEIVED  
Office of Oil and Gas

APR 04 2016

WV Department of  
Environmental Protection



CHESAPEAKE  
ROBERT YOUNG MSH 3H  
MARSHALL COUNTY, WV  
FINAL PVA



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	10676.00	90.56	311.14	6461.74	2970.76	-3283.66	0.00	0.00	4428.04	
2	10741.00	90.56	311.14	6461.11	3013.52	-3332.61	0.00	0.00	4493.02	
3	10863.73	88.80	312.85	6461.79	3095.63	-3423.81	2.00	135.81	4615.74	3H PBHL P5
4	10913.73	88.80	312.85	6462.84	3129.63	-3460.46	0.00	0.00	4665.72	
5	11083.94	90.50	312.85	6463.88	3245.38	-3585.24	1.00	0.00	4835.92	
6	13251.54	90.50	312.85	6444.88	4719.50	-5174.30	0.00	0.00	7003.36	3H PBHL P5

WELL DETAILS							
Name	N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
3H	3.20	-34.30	523027.10	1682057.30	39°55'49.743N	080°38'01.506W	N/A

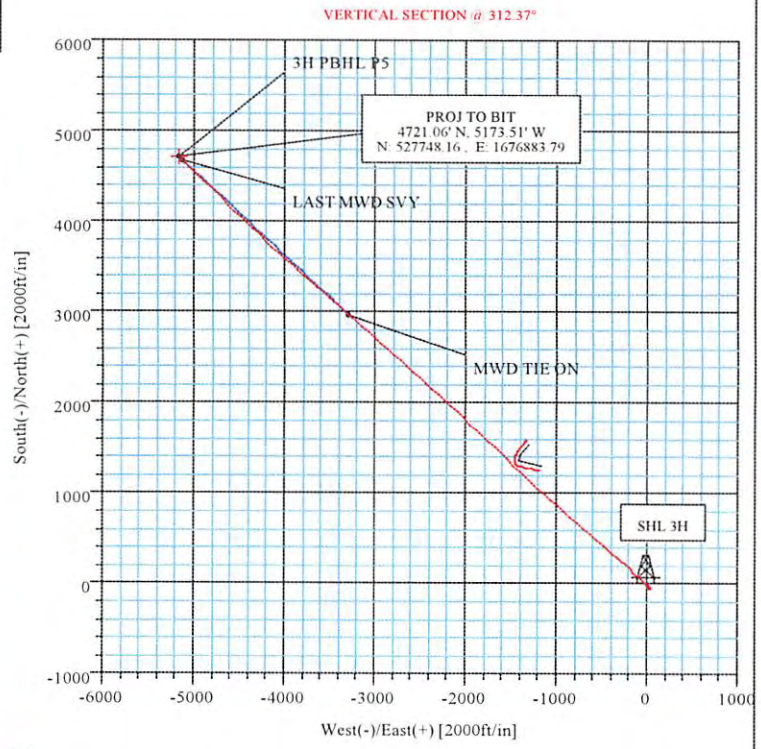
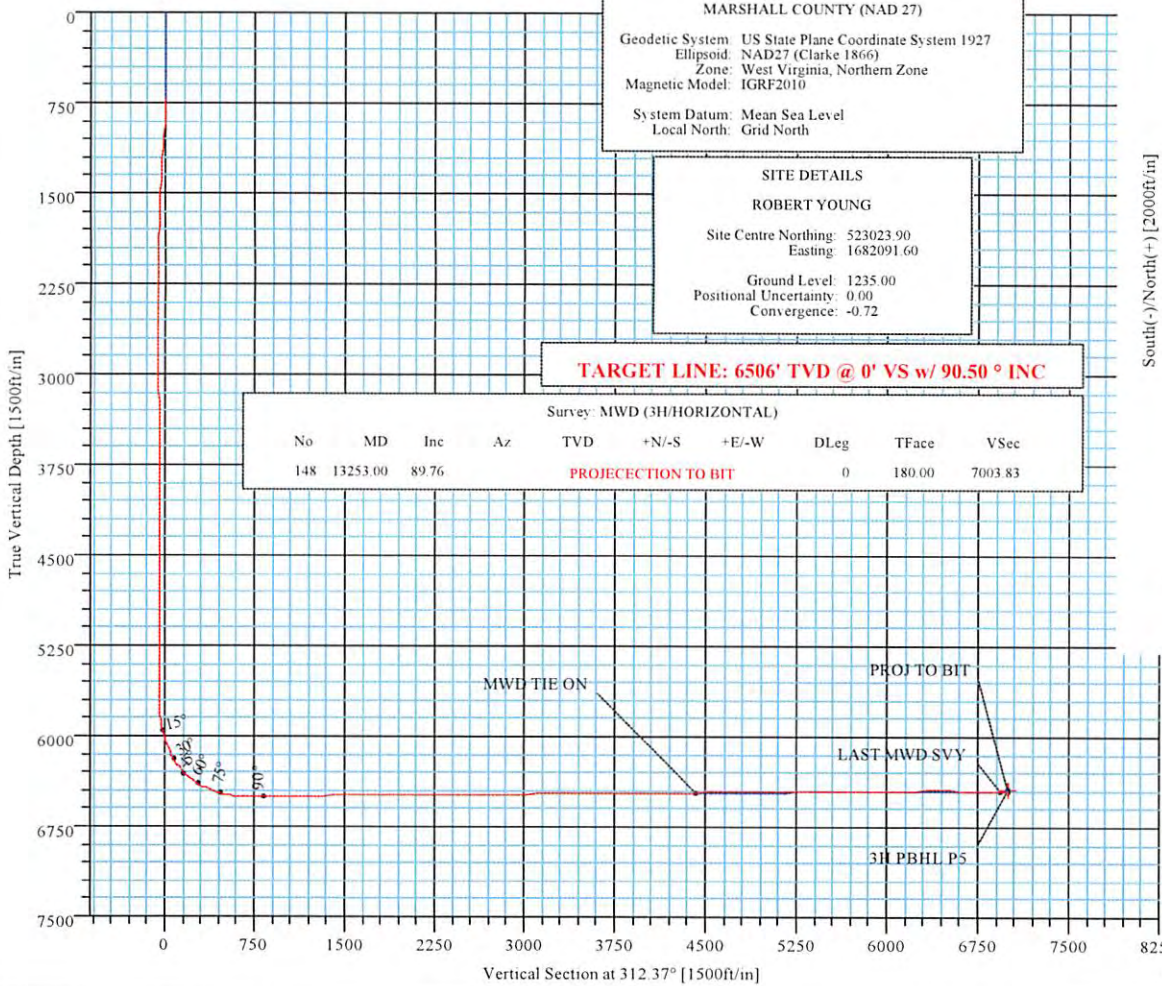
TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
3H PBHL P5	6444.88	4719.50	-5174.30	527746.60	1676883.00	Point

**FIELD DETAILS**  
MARSHALL COUNTY (NAD 27)  
Geodetic System: US State Plane Coordinate System 1927  
Ellipsoid: NAD27 (Clarke 1866)  
Zone: West Virginia, Northern Zone  
Magnetic Model: IGRF2010  
System Datum: Mean Sea Level  
Local North: Grid North

**SITE DETAILS**  
ROBERT YOUNG  
Site Centre Northing: 523023.90  
Easting: 1682091.60  
Ground Level: 1235.00  
Positional Uncertainty: 0.00  
Convergence: -0.72

**TARGET LINE: 6506' TVD @ 0° VS w/ 90.50° INC**

Survey: MWD (3H/HORIZONTAL)										
No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	
148	13253.00	89.76					0	180.00	7003.83	PROJECTION TO BIT



RECEIVED  
Office of Oil and Gas  
APR 04 2016  
WV Department of  
Environmental Protection

Azimuths to Grid North  
 True North: 0.72°  
 Magnetic North: -7.99°  
 Magnetic Field  
 Strength: 52648nT  
 Dip Angle: 67.32°  
 Date: 2/25/2014  
 Model: IGRF2010  
**TOTAL CORRECTION TO GRID NORTH -7.99° WEST**

Survey: MWD (3H/HORIZONTAL)



# Weatherford Survey Report



<b>Company:</b> CHESAPEAKE <b>Field:</b> MARSHALL COUNTY (NAD 27) <b>Site:</b> ROBERT YOUNG <b>Well:</b> 3H <b>Wellpath:</b> HORIZONTAL	<b>Date:</b> 3/19/2014 <b>Co-ordinate(NE) Reference:</b> Well: 3H, Grid North <b>Vertical (TVD) Reference:</b> SITE 1257.0 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,312.37Azi) <b>Survey Calculation Method:</b> Minimum Curvature	<b>Time:</b> 09:52:07 <b>Page:</b> 1								
<b>Survey:</b> MWD <b>Company:</b> Weatherford <b>Tool:</b> MWD;MWD - Standard	<b>Start Date:</b> 3/15/2014 <b>Engineer:</b> Dev Kumar <b>Tied-to:</b> From: GYROS									
<b>Field:</b> MARSHALL COUNTY (NAD 27)										
<b>Map System:</b> US State Plane Coordinate System 1927 <b>Geo Datum:</b> NAD27 (Clarke 1866) <b>Sys Datum:</b> Mean Sea Level		<b>Map Zone:</b> West Virginia, Northern Zone <b>Coordinate System:</b> Well Centre <b>Geomagnetic Model:</b> IGRF2010								
<b>Site:</b> ROBERT YOUNG										
<b>Site Position:</b> <b>From:</b> Map <b>Position Uncertainty:</b> 0.00 ft <b>Ground Level:</b> 1235.00 ft										
		<b>Northing:</b> 523023.90 ft <b>Easting:</b> 1682091.60 ft								
		<b>Latitude:</b> 39 55 49.716 N <b>Longitude:</b> 80 38 1.065 W <b>North Reference:</b> Grid <b>Grid Convergence:</b> -0.72 deg								
<b>Well:</b> 3H <b>Well Position:</b> +N/-S 3.20 ft <b>Position Uncertainty:</b> 0.00 ft										
		<b>Slot Name:</b> <b>Latitude:</b> 39 55 49.743 N <b>Longitude:</b> 80 38 1.506 W								
<b>Wellpath:</b> HORIZONTAL <b>Current Datum:</b> SITE <b>Magnetic Data:</b> 2/25/2014 <b>Field Strength:</b> 52648 nT <b>Vertical Section:</b> Depth From (TVD) ft										
		<b>Height:</b> 1257.00 ft <b>Drilled From:</b> Surface <b>Tie-on Depth:</b> 0.00 ft <b>Above System Datum:</b> Mean Sea Level <b>Declination:</b> -8.71 deg <b>Mag Dip Angle:</b> 67.32 deg <b>+E/-W:</b> ft <b>Direction:</b> deg								
		<b>0.00</b> <b>0.00</b> <b>0.00</b> <b>312.37</b>								
<b>Survey</b>										
MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
725.00	0.21	255.89	724.99	-2.97	1.02	-2.75	0.00	523024.13	1682058.32	
828.00	1.08	132.36	827.98	-3.67	1.56	-3.62	1.17	523023.43	1682058.86	
923.00	4.02	121.83	922.88	-6.03	5.05	-7.79	3.12	523021.07	1682062.35	
1018.00	3.82	129.76	1017.66	-9.81	10.31	-14.23	0.61	523017.29	1682067.61	
1112.00	3.66	130.56	1111.46	-13.76	15.00	-20.35	0.18	523013.34	1682072.30	
1206.00	3.26	133.78	1205.29	-17.56	19.20	-26.02	0.47	523009.54	1682076.50	
1299.00	3.11	130.06	1298.14	-21.02	23.04	-31.19	0.27	523006.08	1682080.34	
1393.00	3.00	129.63	1392.01	-24.23	26.89	-36.19	0.12	523002.87	1682084.19	
1487.00	2.56	129.11	1485.90	-27.12	30.41	-40.75	0.47	522999.98	1682087.71	
1582.00	2.35	134.63	1580.81	-29.83	33.45	-44.81	0.33	522997.27	1682090.75	
1676.00	2.27	129.88	1674.74	-32.37	36.25	-48.60	0.22	522994.73	1682093.55	
1771.00	2.07	129.95	1769.67	-34.68	39.01	-52.19	0.21	522992.42	1682096.31	
1866.00	2.06	139.55	1864.61	-37.08	41.43	-55.60	0.36	522990.02	1682098.73	
1960.00	0.66	182.49	1958.58	-38.91	42.50	-57.62	1.74	522988.19	1682099.80	
2056.00	0.58	219.01	2054.57	-39.84	42.17	-58.00	0.41	522987.26	1682099.47	
2151.00	0.49	215.61	2149.57	-40.54	41.63	-58.08	0.10	522986.56	1682098.93	
2246.00	0.58	215.79	2244.57	-41.26	41.11	-58.18	0.09	522985.84	1682098.41	
2340.00	0.63	247.69	2338.56	-41.85	40.36	-58.02	0.36	522985.25	1682097.66	
2449.00	0.64	245.60	2447.55	-42.32	39.25	-57.52	0.02	522984.78	1682096.55	
2558.00	0.45	253.87	2556.55	-42.69	38.28	-57.06	0.19	522984.41	1682095.58	
2653.00	0.34	254.29	2651.55	-42.87	37.65	-56.71	0.12	522984.23	1682094.95	
2747.00	0.28	262.23	2745.54	-42.98	37.16	-56.42	0.08	522984.12	1682094.46	
2841.00	0.31	283.18	2839.54	-42.95	36.68	-56.05	0.12	522984.15	1682093.98	
2936.00	0.31	271.96	2934.54	-42.89	36.18	-55.63	0.06	522984.21	1682093.48	

RECEIVED  
Office of Oil and Gas  
APR 04 2016  
WV Department of  
Environmental Protection

<b>Company:</b> CHESAPEAKE	<b>Date:</b> 3/19/2014	<b>Time:</b> 09:52:07	<b>Page:</b> 2
<b>Field:</b> MARSHALL COUNTY (NAD 27)	<b>Co-ordinate(NE) Reference:</b>	Well: 3H, Grid North	
<b>Site:</b> ROBERT YOUNG	<b>Vertical (TVD) Reference:</b>	SITE 1257.0	
<b>Well:</b> 3H	<b>Section (VS) Reference:</b>	Well (0.00N,0.00E,312.37Azi)	
<b>Wellpath:</b> HORIZONTAL	<b>Survey Calculation Method:</b>	Minimum Curvature	<b>Db:</b> Sybase

### Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
3031.00	0.33	280.81	3029.54	-42.83	35.65	-55.20	0.06	522984.27	1682092.95	
3223.00	0.21	273.44	3221.54	-42.70	34.76	-54.46	0.06	522984.40	1682092.06	
3411.00	0.25	257.62	3409.54	-42.77	34.01	-53.95	0.04	522984.33	1682091.31	
3600.00	0.21	279.86	3598.54	-42.80	33.27	-53.42	0.05	522984.30	1682090.57	
3694.00	0.20	240.24	3692.54	-42.85	32.95	-53.22	0.15	522984.25	1682090.25	
3788.00	0.27	249.69	3786.53	-43.01	32.60	-53.07	0.08	522984.09	1682089.90	
3883.00	0.44	227.59	3881.53	-43.33	32.13	-52.94	0.23	522983.77	1682089.43	
4072.00	0.54	225.71	4070.53	-44.44	30.95	-52.82	0.05	522982.66	1682088.25	
4262.00	0.44	242.78	4260.52	-45.40	29.66	-52.51	0.09	522981.70	1682086.96	
4448.00	0.44	252.80	4446.51	-45.94	28.35	-51.90	0.04	522981.16	1682085.65	
4637.00	0.50	266.06	4635.51	-46.21	26.83	-50.96	0.07	522980.89	1682084.13	
4732.00	0.45	262.69	4730.50	-46.29	26.05	-50.44	0.06	522980.81	1682083.35	
4919.00	0.43	295.31	4917.50	-46.08	24.68	-49.29	0.13	522981.02	1682081.98	
5013.00	0.35	314.07	5011.50	-45.73	24.16	-48.67	0.16	522981.37	1682081.46	
5202.00	0.51	313.02	5200.49	-44.75	23.13	-47.25	0.08	522982.35	1682080.43	
5297.00	0.46	304.48	5295.49	-44.25	22.50	-46.45	0.09	522982.85	1682079.80	
5485.00	0.54	324.52	5483.48	-43.10	21.37	-44.83	0.10	522984.00	1682078.67	
5529.00	0.60	318.69	5527.48	-42.76	21.10	-44.40	0.19	522984.34	1682078.40	
5668.00	0.96	311.33	5666.47	-41.44	19.74	-42.51	0.27	522985.66	1682077.04	
5763.00	0.82	313.01	5761.45	-40.46	18.65	-41.04	0.15	522986.64	1682075.95	
5793.00	0.81	301.67	5791.45	-40.20	18.31	-40.62	0.54	522986.90	1682075.61	
5824.00	1.34	323.24	5822.45	-39.79	17.91	-40.05	2.12	522987.31	1682075.21	
5856.00	4.80	335.87	5854.39	-38.27	17.13	-38.45	10.95	522988.83	1682074.43	
5887.00	9.14	334.89	5885.16	-34.86	15.56	-34.98	14.00	522992.24	1682072.86	
5919.00	12.69	333.05	5916.57	-29.42	12.89	-29.35	11.15	522997.68	1682070.19	
5950.00	15.05	331.39	5946.67	-22.85	9.41	-22.35	7.72	523004.25	1682066.71	
5980.00	16.06	324.48	5975.57	-16.05	5.14	-14.61	7.03	523011.05	1682062.44	
6011.00	17.63	318.36	6005.24	-9.05	-0.47	-5.75	7.63	523018.05	1682056.83	
6043.00	19.50	315.18	6035.58	-1.64	-7.46	4.40	6.64	523025.46	1682049.84	
6074.00	20.94	314.48	6064.67	5.91	-15.06	15.11	4.71	523033.01	1682042.24	
6106.00	22.81	313.98	6094.36	14.22	-23.60	27.02	5.87	523041.32	1682033.70	
6137.00	24.40	313.46	6122.77	22.80	-32.57	39.43	5.17	523049.90	1682024.73	
6169.00	26.56	313.11	6151.65	32.24	-42.60	53.20	6.77	523059.34	1682014.70	
6200.00	29.06	311.36	6179.07	41.95	-53.31	67.66	8.48	523069.05	1682003.99	
6232.00	31.83	310.13	6206.66	52.53	-65.60	83.86	8.87	523079.63	1681991.70	
6263.00	34.44	309.98	6232.61	63.43	-78.57	100.79	8.42	523090.53	1681978.73	
6294.00	37.00	310.23	6257.78	75.09	-92.41	118.88	8.27	523102.19	1681964.89	
6326.00	40.19	311.97	6282.79	88.22	-107.44	138.83	10.53	523115.32	1681949.86	
6358.00	44.50	313.86	6306.43	102.90	-123.21	160.38	14.04	523130.00	1681934.09	
6389.00	48.38	315.23	6327.79	118.66	-139.21	182.82	12.92	523145.76	1681918.09	
6421.00	52.54	315.88	6348.16	136.28	-156.48	207.45	13.09	523163.38	1681900.82	
6452.00	56.00	315.36	6366.26	154.26	-174.08	232.57	11.24	523181.36	1681883.22	
6484.00	58.39	314.40	6383.60	173.23	-193.14	259.44	7.88	523200.33	1681864.16	
6516.00	60.73	312.55	6399.81	192.21	-213.16	287.02	8.85	523219.31	1681844.14	
6547.00	63.19	311.59	6414.38	210.54	-233.47	314.38	8.39	523237.64	1681823.83	
6579.00	66.07	311.85	6428.09	229.78	-255.05	343.29	9.03	523256.88	1681802.25	
6611.00	67.68	311.66	6440.66	249.38	-277.01	372.71	5.06	523276.48	1681780.29	
6642.00	68.06	311.61	6452.33	268.46	-298.47	401.43	1.23	523295.56	1681758.83	
6674.00	70.63	311.86	6463.62	288.39	-320.81	431.37	8.06	523315.49	1681736.49	
6705.00	74.12	311.28	6473.01	307.99	-342.91	460.90	11.40	523335.09	1681714.39	
6737.00	77.63	310.86	6480.81	328.37	-366.31	491.92	11.04	523355.47	1681690.99	
6769.00	81.19	310.48	6486.69	348.87	-390.16	523.36	11.19	523375.97	1681667.14	

RECEIVED  
Office of Oil and Gas

APR 03 2016

WV Department of  
Environmental Protection



# Weatherford Survey Report



Company: CHESAPEAKE  
 Field: MARSHALL COUNTY (NAD 27)  
 Site: ROBERT YOUNG  
 Well: 3H  
 Wellpath: HORIZONTAL

Date: 3/19/2014 Time: 09:52:07 Page: 3  
 Co-ordinate(NE) Reference: Well: 3H, Grid North  
 Vertical (TVD) Reference: SITE 1257.0  
 Section (VS) Reference: Well (0.00N,0.00E,312.37Azi)  
 Survey Calculation Method: Minimum Curvature Db: Sybase

## Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
6800.00	83.61	309.63	6490.79	368.64	-413.68	554.06	8.27	523395.74	1681643.62	
6832.00	86.19	308.73	6493.64	388.77	-438.38	585.88	8.54	523415.87	1681618.92	
6863.00	87.50	308.48	6495.34	408.08	-462.57	616.77	4.30	523435.18	1681594.73	
6895.00	87.22	308.29	6496.82	427.93	-487.63	648.65	1.06	523455.03	1681569.67	
6989.00	89.58	309.51	6499.44	486.93	-560.75	742.44	2.83	523514.03	1681496.55	
7084.00	90.09	309.71	6499.72	547.50	-633.93	837.33	0.58	523574.60	1681423.37	
7179.00	89.18	311.69	6500.32	609.45	-705.95	932.28	2.29	523636.55	1681351.35	
7273.00	88.78	312.23	6501.99	672.29	-775.84	1026.26	0.71	523699.39	1681281.46	
7367.00	92.03	311.07	6501.33	734.75	-846.07	1120.24	3.67	523761.85	1681211.23	
7462.00	91.63	310.16	6498.30	796.56	-918.14	1215.14	1.05	523823.66	1681139.16	
7557.00	91.78	312.49	6495.47	859.25	-989.45	1310.08	2.46	523886.35	1681067.85	
7652.00	92.24	313.56	6492.14	924.03	-1058.86	1405.01	1.23	523951.13	1680998.44	
7746.00	92.17	312.54	6488.52	988.15	-1127.49	1498.93	1.09	524015.25	1680929.81	
7841.00	91.57	311.63	6485.42	1051.79	-1197.96	1593.88	1.15	524078.89	1680859.34	
7936.00	89.44	313.36	6484.58	1115.96	-1268.00	1688.87	2.89	524143.06	1680789.30	
8030.00	88.95	313.60	6485.90	1180.63	-1336.20	1782.84	0.58	524207.73	1680721.10	
8125.00	88.64	313.13	6487.90	1245.85	-1405.25	1877.81	0.59	524272.95	1680652.05	
8219.00	91.05	314.70	6488.16	1311.04	-1472.96	1971.76	3.06	524338.14	1680584.34	
8315.00	91.03	315.03	6486.41	1378.75	-1540.99	2067.65	0.34	524405.85	1680516.31	
8410.00	90.86	314.76	6484.85	1445.79	-1608.27	2162.55	0.34	524472.89	1680449.03	
8504.00	90.44	312.62	6483.78	1510.71	-1676.24	2256.51	2.32	524537.81	1680381.06	
8598.00	90.23	312.78	6483.23	1574.46	-1745.32	2350.51	0.28	524601.56	1680311.98	
8693.00	89.72	313.11	6483.27	1639.18	-1814.86	2445.50	0.64	524666.28	1680242.44	
8788.00	89.34	314.51	6484.05	1704.94	-1883.41	2540.47	1.53	524732.04	1680173.89	
8882.00	90.75	312.23	6483.98	1769.49	-1951.73	2634.44	2.85	524796.59	1680105.57	
8976.00	89.93	313.63	6483.42	1833.51	-2020.56	2728.44	1.73	524860.61	1680036.74	
9070.00	91.61	311.19	6482.16	1896.89	-2089.95	2822.42	3.15	524923.99	1679967.35	
9164.00	91.58	312.50	6479.54	1959.58	-2159.94	2916.37	1.39	524986.68	1679897.36	
9258.00	91.54	311.45	6476.98	2022.42	-2229.80	3010.34	1.12	525049.52	1679827.50	
9353.00	91.50	311.86	6474.46	2085.54	-2300.75	3105.29	0.43	525112.64	1679756.55	
9447.00	91.24	313.12	6472.21	2149.01	-2370.05	3199.27	1.37	525176.11	1679687.25	
9542.00	91.22	313.00	6470.17	2213.86	-2439.44	3294.24	0.13	525240.96	1679617.86	
9637.00	90.84	312.69	6468.47	2278.45	-2509.09	3389.22	0.52	525305.55	1679548.21	
9730.00	90.42	312.49	6467.44	2341.39	-2577.55	3482.21	0.50	525368.49	1679479.75	
9824.00	90.37	312.75	6466.80	2405.03	-2646.72	3576.21	0.28	525432.13	1679410.58	
9919.00	90.07	311.16	6466.43	2468.54	-2717.36	3671.20	1.70	525495.64	1679339.94	
10013.00	89.91	311.50	6466.45	2530.62	-2787.95	3765.19	0.40	525557.72	1679269.35	
10108.00	89.76	310.82	6466.72	2593.15	-2859.47	3860.16	0.73	525620.25	1679197.83	
10203.00	89.14	310.71	6467.63	2655.17	-2931.42	3955.12	0.66	525682.27	1679125.88	
10297.00	90.89	312.17	6467.61	2717.38	-3001.88	4049.10	2.42	525744.48	1679055.42	
10392.00	91.10	312.02	6465.96	2781.06	-3072.37	4144.09	0.27	525808.16	1678984.93	
10487.00	90.93	312.47	6464.28	2844.92	-3142.68	4239.07	0.51	525872.02	1678914.62	
10582.00	90.79	311.70	6462.85	2908.58	-3213.18	4334.06	0.82	525935.68	1678844.12	
10676.00	90.56	311.14	6461.74	2970.76	-3283.66	4428.04	0.64	525997.86	1678773.64	MWD TIE ON
10771.00	90.44	311.12	6460.91	3033.25	-3355.21	4523.01	0.13	526060.35	1678702.09	
10866.00	90.47	311.19	6460.16	3095.77	-3426.74	4617.99	0.08	526122.87	1678630.56	
10961.00	90.21	311.65	6459.60	3158.61	-3497.98	4712.97	0.56	526185.71	1678559.32	
11055.00	89.88	311.81	6459.52	3221.18	-3568.13	4806.97	0.39	526248.28	1678489.17	
11150.00	89.72	311.17	6459.85	3284.12	-3639.29	4901.96	0.69	526311.22	1678418.01	
11245.00	89.69	310.60	6460.34	3346.30	-3711.11	4996.92	0.60	526373.40	1678346.19	
11339.00	91.40	311.84	6459.45	3408.23	-3781.81	5090.89	2.25	526435.33	1678275.49	
11434.00	91.49	312.57	6457.05	3472.03	-3852.16	5185.86	0.77	526499.13	1678205.14	
11529.00	91.56	312.76	6454.52	3536.39	-3921.99	5280.83	0.21	526563.49	1678135.31	

RECEIVED  
 Office of Oil and Gas

APR 04 2016

WV Department of  
 Environmental Protection



# Weatherford Survey Report



<b>Company:</b> CHESAPEAKE <b>Field:</b> MARSHALL COUNTY (NAD 27) <b>Site:</b> ROBERT YOUNG <b>Well:</b> 3H <b>Wellpath:</b> HORIZONTAL	<b>Date:</b> 3/19/2014 <b>Co-ordinate(NE) Reference:</b> Well: 3H, Grid North <b>Vertical (TVD) Reference:</b> SITE 1257.0 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,312.37Azi) <b>Survey Calculation Method:</b> Minimum Curvature	<b>Time:</b> 09:52:07 <b>Page:</b> 4 <b>Db:</b> Sybase
---	--	--

### Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
11625.00	89.60	310.45	6453.55	3600.12	-3993.76	5376.80	3.16	526627.22	1678063.54	
11720.00	89.00	311.73	6454.71	3662.56	-4065.35	5471.77	1.49	526689.66	1677991.95	
11815.00	90.00	312.61	6455.54	3726.33	-4135.76	5566.76	1.40	526753.43	1677921.54	
11910.00	89.77	313.03	6455.73	3790.90	-4205.44	5661.76	0.50	526818.00	1677851.86	
12005.00	91.51	313.15	6454.67	3855.79	-4274.81	5756.74	1.84	526882.89	1677782.49	
12100.00	91.28	312.90	6452.36	3920.59	-4344.24	5851.71	0.36	526947.69	1677713.06	
12195.00	91.03	313.34	6450.44	3985.52	-4413.57	5946.68	0.53	527012.62	1677643.73	
12290.00	90.63	313.10	6449.07	4050.56	-4482.79	6041.66	0.49	527077.66	1677574.51	
12385.00	90.87	311.53	6447.82	4114.51	-4553.03	6136.65	1.67	527141.61	1677504.27	
12481.00	91.22	319.21	6446.07	4182.77	-4620.41	6232.43	8.01	527209.87	1677436.89	
12576.00	90.09	314.91	6444.98	4252.29	-4685.11	6327.08	4.68	527279.39	1677372.19	
12671.00	89.79	313.88	6445.08	4318.75	-4752.99	6422.02	1.13	527345.85	1677304.31	
12766.00	90.00	314.66	6445.26	4385.07	-4821.01	6516.97	0.85	527412.17	1677236.29	
12862.00	89.93	313.53	6445.32	4451.87	-4889.96	6612.92	1.18	527478.97	1677167.34	
12957.00	89.44	313.58	6445.84	4517.33	-4958.80	6707.90	0.52	527544.43	1677098.50	
13052.00	89.32	313.60	6446.87	4582.82	-5027.61	6802.87	0.13	527609.92	1677029.69	
13147.00	89.61	313.62	6447.75	4648.35	-5096.39	6897.85	0.31	527675.45	1676960.91	
13188.00	89.76	313.24	6447.98	4676.53	-5126.16	6938.84	1.00	527703.63	1676931.14	LAST MWD SVY
13253.00	89.76	313.24	6448.25	4721.06	-5173.51	7003.83	0.00	527748.16	1676883.79	PROJ TO BIT

### Annotation

MD ft	TVD ft	
10676.00	6461.74	MWD TIE ON
13188.00	6447.98	LAST MWD SVY
13253.00	6448.25	PROJ TO BIT

RECEIVED  
Office of Oil and Gas

APR 04 2015

WV Department of  
Environmental Protection