



Project: Mary Prospect
 Site: Howell Pad
 Well: Howell 1H
 Wellbore: OH
 Design: As Drilled



RECEIVED
 Office of Oil and Gas
 FEB 12 2015
 WV Department of
 Environmental Protection

WELL DETAILS: Howell 1H

+N/-S +E/-W 0.0 0.0
 Northing 401702.68
 Easting 1635235.8339° 35' 44.492" N
 Longitude 80° 47' 40.046" W

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Howell 1H, Grid North
 Vertical (TVD) Reference: GL 1302.2 & KB 18' @ 1320.0usft (Saxon 141)
 Section (V/S) Reference: Slot - (0' 0"N, 0.0'E)
 Measured Depth Reference: GL 1302.2 & KB 18' @ 1320.0usft (Saxon 141)
 Calculation Method: Minimum Curvature

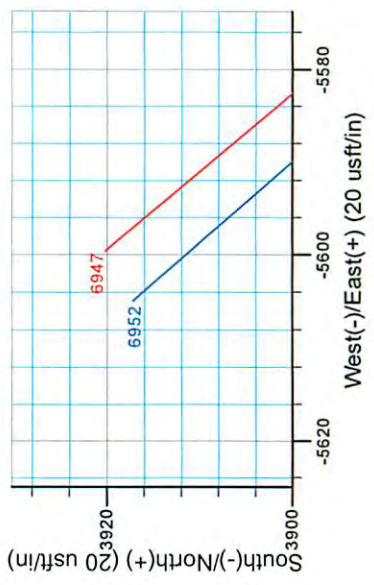
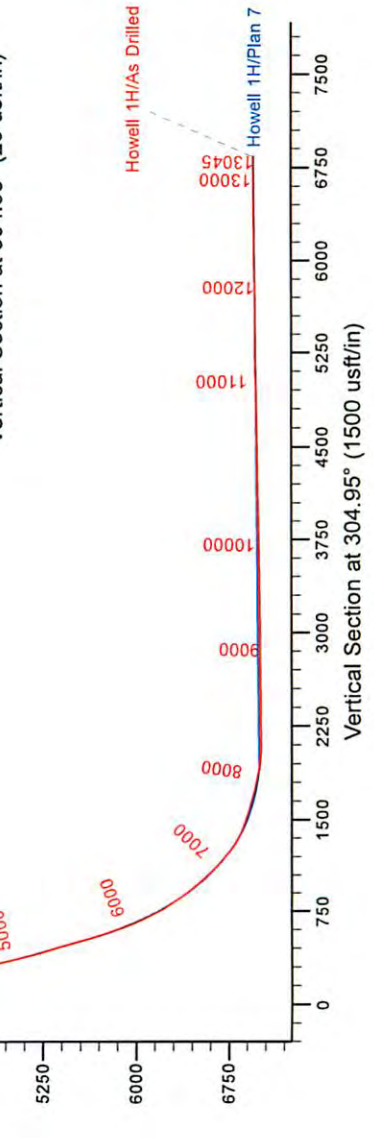
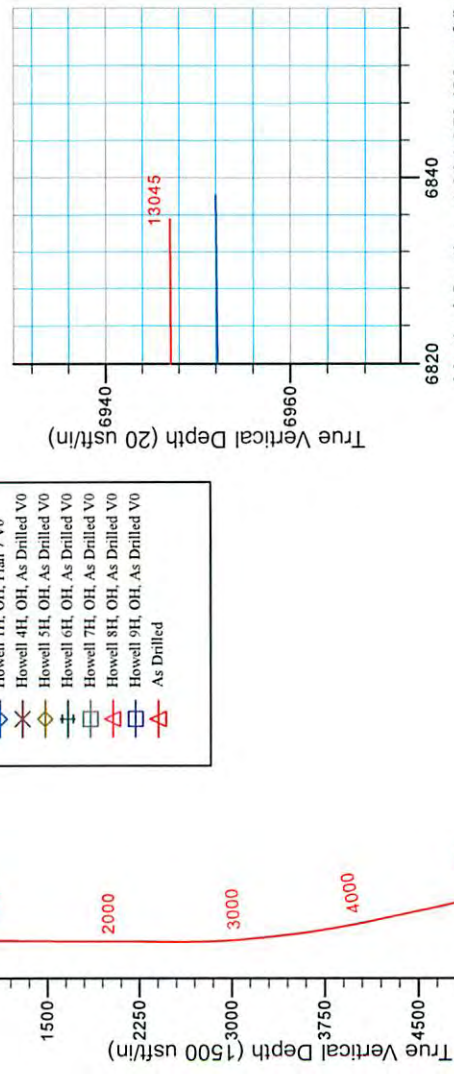
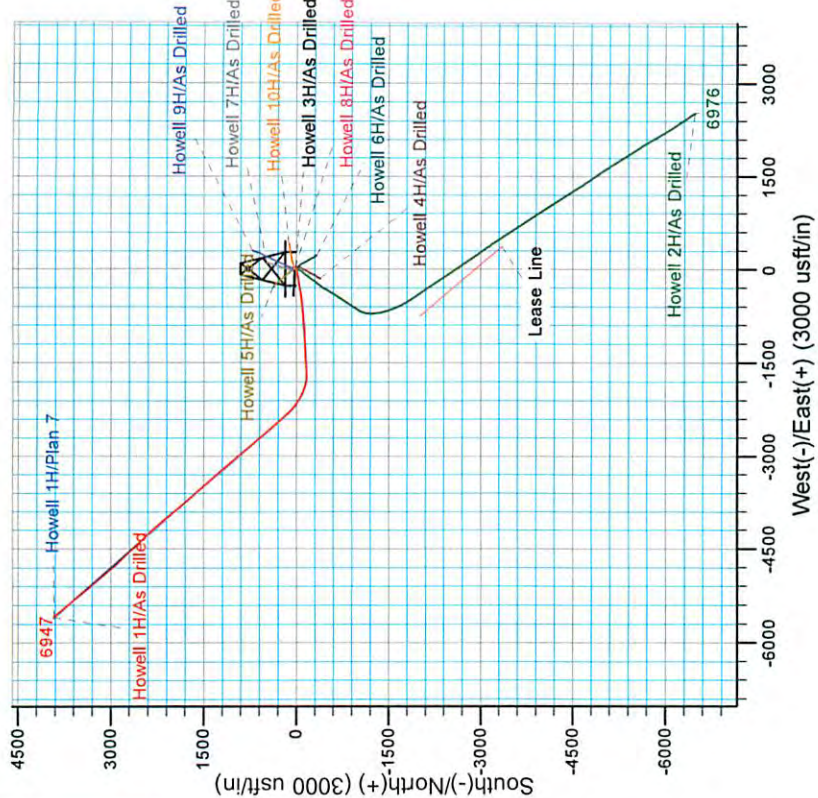
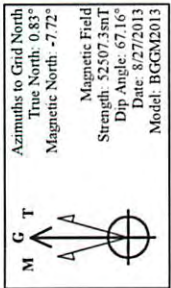
PROJECT DETAILS: Mary Prospect

Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: West Virginia North - 4701
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSet	Target
1	5706.0	20.96	264.84	5606.2	-97.2	-701.9	0.00	0.00	0.00	519.7
2	5803.0	20.96	264.84	5696.8	-100.4	-736.5	0.00	0.00	0.00	546.2
3	7243.9	60.00	267.05	6771.8	-157.9	-1652.0	2.71	3.03	1263.6	
4	8073.3	90.50	319.00	6995.0	164.6	-2342.8	7.00	68.16	2014.6	Howell 1H LP3
5	93045.8	90.50	319.00	6952.0	3917.2	-5605.0	0.00	0.00	6838.1	Howell 1H_PPHL3

- LEGEND
- Howell 10H, OH, As Drilled V0
 - Howell 2H, OH, As Drilled V0
 - Howell 3H, OH, As Drilled V0
 - Howell 1H, OH, Plan 7 V0
 - Howell 4H, OH, As Drilled V0
 - Howell 5H, OH, As Drilled V0
 - Howell 6H, OH, As Drilled V0
 - Howell 7H, OH, As Drilled V0
 - Howell 8H, OH, As Drilled V0
 - Howell 9H, OH, As Drilled V0
 - As Drilled



06/12/2015



Stone Energy

Mary Prospect
Howell Pad
Howell 1H

OH

Design: As Drilled

Standard Survey Report

06 September, 2013

RECEIVED
Office of Oil and Gas

FEB 12 2015

WV Department of
Environmental Protection



Scientific Drilling

www.scientificdrilling.com



06/12/2015



Scientific Drilling International
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Howell 1H
Project:	Mary Prospect	TVD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Site:	Howell Pad	MD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Well:	Howell 1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Northeast District

Project	Mary Prospect, West Virginia		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site	Howell Pad				
Site Position:		Northing:	401,702.68 usft	Latitude:	39° 35' 44.492 N
From:	Map	Easting:	1,635,235.83 usft	Longitude:	80° 47' 40.046 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.83 °

Well	Howell 1H					
Well Position	+N/-S	0.0 usft	Northing:	401,702.68 usft	Latitude:	39° 35' 44.492 N
	+E/-W	0.0 usft	Easting:	1,635,235.83 usft	Longitude:	80° 47' 40.046 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,302.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/20/2012	-8.48	67.19	52,632
	IGRF2010	7/29/2013	-8.50	67.14	52,558
	BGGM2013	8/27/2013	-8.55	67.16	52,507

Design	As Drilled				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	304.95	

Survey Program	Date	9/6/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
103.0	5,706.0	Survey 1 - Gyro (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
5,716.0	13,045.0	Survey 2 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
103.0	0.56	309.96	103.0	0.3	-0.4	0.5	0.54	0.54	0.00	
First SDI Gyro Survey										
203.0	0.26	310.44	203.0	0.8	-0.9	1.2	0.30	-0.30	0.48	
303.0	0.23	34.68	303.0	1.1	-1.0	1.4	0.33	-0.03	84.24	
403.0	0.19	60.29	403.0	1.3	-0.7	1.4	0.10	-0.04	25.61	
503.0	0.13	63.08	503.0	1.5	-0.5	0.9	0.08	-0.06	2.79	

RECEIVED
Office of Oil and Gas



Scientific Drilling International
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Howell 1H
Project:	Mary Prospect	TVD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Site:	Howell Pad	MD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Well:	Howell 1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Northeast District

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
603.0	0.12	80.31	603.0	1.5	-0.3	1.1	0.04	-0.01	17.23
703.0	0.08	209.01	703.0	1.5	-0.2	1.0	0.18	-0.04	128.70
803.0	0.08	100.54	803.0	1.4	-0.2	1.0	0.13	0.00	-108.47
903.0	0.12	72.87	903.0	1.4	0.0	0.8	0.06	0.04	-27.67
1,003.0	0.04	351.11	1,003.0	1.5	0.1	0.8	0.12	-0.08	-81.76
1,103.0	0.07	288.65	1,103.0	1.6	0.0	0.9	0.06	0.03	-62.46
1,203.0	0.06	29.90	1,203.0	1.6	0.0	0.9	0.10	-0.01	101.25
1,303.0	0.10	123.57	1,303.0	1.6	0.1	0.9	0.12	0.04	93.67
1,403.0	0.26	112.76	1,403.0	1.5	0.4	0.6	0.16	0.16	-10.81
1,503.0	0.28	113.45	1,503.0	1.3	0.8	0.1	0.02	0.02	0.69
1,603.0	0.24	117.04	1,603.0	1.1	1.2	-0.4	0.04	-0.04	3.59
1,703.0	0.12	172.36	1,703.0	0.9	1.4	-0.6	0.20	-0.12	55.32
1,803.0	0.19	148.35	1,803.0	0.7	1.5	-0.9	0.09	0.07	-24.01
1,903.0	0.21	140.78	1,903.0	0.4	1.7	-1.2	0.03	0.02	-7.57
2,003.0	0.25	153.76	2,003.0	0.1	1.9	-1.6	0.07	0.04	12.98
2,103.0	0.22	152.87	2,103.0	-0.3	2.1	-1.9	0.03	-0.03	-0.89
2,203.0	0.27	174.01	2,203.0	-0.7	2.2	-2.2	0.10	0.05	21.14
2,303.0	0.54	158.63	2,303.0	-1.4	2.4	-2.8	0.29	0.27	-15.38
2,403.0	0.57	166.06	2,403.0	-2.3	2.7	-3.6	0.08	0.03	7.43
2,503.0	0.50	148.65	2,503.0	-3.2	3.1	-4.3	0.18	-0.07	-17.41
2,603.0	0.44	210.29	2,603.0	-3.9	3.1	-4.8	0.48	-0.06	61.64
2,703.0	1.20	261.72	2,703.0	-4.4	1.9	-4.0	0.99	0.76	51.43
2,803.0	2.41	275.14	2,802.9	-4.3	-1.3	-1.4	1.27	1.21	13.42
2,903.0	3.68	277.52	2,902.8	-3.7	-6.5	3.2	1.28	1.27	2.38
3,003.0	4.96	270.79	3,002.5	-3.2	-14.0	9.7	1.37	1.28	-6.73
3,103.0	6.14	265.54	3,102.0	-3.6	-23.7	17.4	1.28	1.18	-5.25
3,203.0	7.78	263.13	3,201.3	-4.8	-35.8	26.5	1.67	1.64	-2.41
3,303.0	7.84	260.40	3,300.3	-6.8	-49.2	36.5	0.38	0.06	-2.73
3,403.0	8.16	258.42	3,399.4	-9.3	-62.9	46.2	0.42	0.32	-1.98
3,503.0	9.24	259.46	3,498.2	-12.2	-77.7	56.7	1.09	1.08	1.04
3,603.0	11.12	260.71	3,596.6	-15.2	-95.1	69.2	1.89	1.88	1.25
3,703.0	12.00	261.13	3,694.6	-18.4	-114.9	83.7	0.88	0.88	0.42
3,803.0	12.92	260.78	3,792.2	-21.8	-136.2	99.2	0.92	0.92	-0.35
3,903.0	14.15	260.94	3,889.5	-25.5	-159.3	116.0	1.23	1.23	0.16
4,003.0	15.32	261.36	3,986.2	-29.4	-184.5	134.3	1.17	1.17	0.42
4,103.0	16.12	261.84	4,082.4	-33.4	-211.3	154.0	0.81	0.80	0.48
4,203.0	15.95	261.40	4,178.5	-37.4	-238.6	174.1	0.21	-0.17	-0.44
4,303.0	15.33	261.63	4,274.8	-41.4	-265.3	193.7	0.62	-0.62	0.23
4,403.0	15.71	260.85	4,371.2	-45.5	-291.7	213.1	0.43	0.38	-0.78
4,503.0	16.65	259.86	4,467.2	-50.1	-319.2	232.9	0.98	0.94	-0.99
4,603.0	16.45	259.40	4,563.1	-55.3	-347.2	252.9	0.24	-0.20	-0.46
4,703.0	17.39	259.90	4,658.8	-60.5	-375.8	273.4	0.95	0.94	0.50
4,803.0	19.30	261.04	4,753.7	-65.7	-406.9	295.9	1.94	1.91	1.14
4,903.0	18.44	258.54	4,848.3	-71.4	-438.7	318.7	1.18	-0.86	-2.50



Scientific Drilling International
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Howell 1H
Project:	Mary Prospect	TVD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Site:	Howell Pad	MD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Well:	Howell 1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Northeast District

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,003.0	17.07	258.10	4,943.5	-77.6	-468.6	339.6	1.38	-1.37	-0.44
5,103.0	18.46	260.69	5,038.8	-83.2	-498.5	361.0	1.60	1.39	2.59
5,203.0	19.69	265.34	5,133.3	-87.1	-531.0	385.3	1.95	1.23	4.65
5,303.0	19.58	268.47	5,227.5	-88.9	-564.5	411.8	1.06	-0.11	3.13
5,403.0	19.56	267.90	5,321.7	-90.0	-598.0	438.6	0.19	-0.02	-0.57
5,503.0	19.58	266.33	5,415.9	-91.6	-631.4	465.1	0.53	0.02	-1.57
5,603.0	20.41	265.51	5,509.9	-94.1	-665.5	491.6	0.88	0.83	-0.82
5,670.4	20.96	264.84	5,573.0	-96.1	-689.3	509.9	0.89	0.82	-0.99
Last SDI Gyro Survey									
5,706.0	20.96	264.84	5,606.2	-97.2	-701.9	519.7	0.00	0.00	0.00
5,716.0	20.19	263.51	5,615.5	-97.6	-705.4	522.3	9.01	-7.70	-13.30
5,717.0	20.19	263.51	5,616.5	-97.6	-705.8	522.6	0.19	-0.19	0.03
First SDI MWD Survey									
5,779.0	20.07	263.53	5,674.7	-100.0	-727.0	538.6	0.19	-0.19	0.03
5,843.0	22.63	263.91	5,734.3	-102.6	-750.1	556.1	4.01	4.00	0.59
5,907.0	25.27	264.16	5,792.8	-105.3	-776.0	575.7	4.13	4.13	0.39
5,969.0	25.97	264.85	5,848.7	-107.8	-802.7	596.1	1.23	1.13	1.11
6,032.0	25.52	264.97	5,905.4	-110.3	-829.9	617.1	0.72	-0.71	0.19
6,095.0	27.26	265.63	5,961.9	-112.6	-857.8	638.6	2.80	2.76	1.05
6,158.0	28.83	265.46	6,017.5	-114.9	-887.4	661.5	2.50	2.49	-0.27
6,221.0	30.81	264.60	6,072.1	-117.6	-918.6	685.6	3.22	3.14	-1.37
6,285.0	33.94	265.04	6,126.2	-120.7	-952.7	711.8	4.90	4.89	0.69
6,348.0	37.03	266.70	6,177.5	-123.3	-989.2	740.1	5.14	4.90	2.63
6,412.0	38.54	266.95	6,228.0	-125.5	-1,028.3	771.0	2.37	2.36	0.39
6,476.0	39.81	266.99	6,277.7	-127.6	-1,068.7	802.9	1.98	1.98	0.06
6,538.0	41.62	266.90	6,324.6	-129.7	-1,109.1	834.7	2.92	2.92	-0.15
6,601.0	43.78	267.06	6,370.9	-132.0	-1,151.7	868.4	3.43	3.43	0.25
6,665.0	46.01	267.07	6,416.3	-134.3	-1,196.8	904.1	3.48	3.48	0.02
6,728.0	46.39	266.85	6,459.9	-136.7	-1,242.2	939.9	0.65	0.60	-0.35
6,791.0	46.89	267.41	6,503.1	-139.0	-1,288.0	976.1	1.02	0.79	0.89
6,855.0	49.23	267.15	6,545.9	-141.3	-1,335.5	1,013.8	3.67	3.66	-0.41
6,914.0	50.49	266.80	6,583.9	-143.7	-1,380.6	1,049.3	2.18	2.14	-0.59
6,975.0	52.85	266.81	6,621.8	-146.3	-1,428.3	1,086.9	3.87	3.87	0.02
7,035.0	54.97	266.98	6,657.1	-148.9	-1,476.8	1,125.1	3.54	3.53	0.28
7,096.0	55.93	266.84	6,691.7	-151.7	-1,526.9	1,164.7	1.59	1.57	-0.23
7,157.0	57.70	266.50	6,725.1	-154.6	-1,577.9	1,204.8	2.94	2.90	-0.56
7,217.0	59.22	266.24	6,756.5	-157.9	-1,628.9	1,244.7	2.56	2.53	-0.43
7,248.0	59.70	266.82	6,772.2	-159.5	-1,655.6	1,265.7	2.23	1.55	1.87
7,278.0	60.64	268.48	6,787.2	-160.5	-1,681.6	1,286.4	5.73	3.13	5.53
7,308.0	62.24	270.87	6,801.5	-160.7	-1,707.9	1,307.9	8.80	5.33	7.97
7,339.0	64.15	272.83	6,815.5	-159.8	-1,735.6	1,331.0	8.35	6.16	6.32
7,369.0	65.58	276.14	6,828.2	-157.7	-1,762.6	1,354.5	11.07	4.77	11.03
7,400.0	67.04	278.31	6,840.7	-154.1	-1,790.8	1,379.6	7.95	4.71	7.00



Scientific Drilling International
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Howell 1H
Project:	Mary Prospect	TVD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Site:	Howell Pad	MD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Well:	Howell 1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Northeast District

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,430.0	68.77	281.38	6,852.0	-149.3	-1,818.2	1,404.7	11.10	5.77	10.23
7,460.0	70.28	283.53	6,862.5	-143.3	-1,845.6	1,430.7	8.39	5.03	7.17
7,490.0	71.19	284.98	6,872.4	-136.3	-1,873.1	1,457.2	5.48	3.03	4.83
7,520.0	71.67	286.98	6,881.9	-128.5	-1,900.4	1,484.1	6.52	1.60	6.67
7,551.0	71.93	287.51	6,891.6	-119.7	-1,928.5	1,512.1	1.83	0.84	1.71
7,581.0	72.37	291.29	6,900.8	-110.3	-1,955.5	1,539.7	12.08	1.47	12.60
7,612.0	72.63	293.31	6,910.1	-99.0	-1,982.8	1,568.5	6.27	0.84	6.52
7,642.0	73.51	295.59	6,918.9	-87.2	-2,008.9	1,596.7	7.84	2.93	7.60
7,673.0	74.39	297.70	6,927.4	-73.8	-2,035.6	1,626.2	7.13	2.84	6.81
7,703.0	74.92	299.37	6,935.4	-60.0	-2,061.0	1,654.9	5.65	1.77	5.57
7,734.0	75.36	301.57	6,943.3	-44.8	-2,086.8	1,684.8	7.00	1.42	7.10
7,764.0	76.06	303.42	6,950.7	-29.2	-2,111.3	1,713.9	6.42	2.33	6.17
7,795.0	76.68	305.00	6,958.0	-12.2	-2,136.2	1,744.0	5.34	2.00	5.10
7,825.0	77.21	306.32	6,964.8	4.8	-2,160.0	1,773.2	4.64	1.77	4.40
7,855.0	78.00	307.46	6,971.2	22.4	-2,183.4	1,802.5	4.55	2.63	3.80
7,885.0	78.61	308.95	6,977.3	40.6	-2,206.5	1,831.8	5.27	2.03	4.97
7,917.0	79.14	310.01	6,983.5	60.5	-2,230.7	1,863.1	3.65	1.66	3.31
7,949.0	79.58	311.33	6,989.4	81.0	-2,254.6	1,894.4	4.28	1.38	4.13
7,980.0	80.90	313.17	6,994.7	101.6	-2,277.2	1,924.7	7.24	4.26	5.94
8,012.0	82.75	315.28	6,999.2	123.7	-2,299.9	1,956.0	8.72	5.78	6.59
8,044.0	83.89	316.42	7,002.9	146.5	-2,322.0	1,987.2	5.02	3.56	3.56
8,076.0	85.03	317.65	7,006.0	169.8	-2,343.7	2,018.3	5.23	3.56	3.84
8,139.0	89.60	318.36	7,009.0	216.5	-2,385.8	2,079.6	7.34	7.25	1.13
8,202.0	90.66	318.09	7,008.8	263.5	-2,427.8	2,140.9	1.74	1.68	-0.43
8,266.0	90.22	318.88	7,008.3	311.4	-2,470.2	2,203.1	1.41	-0.69	1.23
8,329.0	90.92	318.53	7,007.7	358.8	-2,511.8	2,264.3	1.24	1.11	-0.56
8,393.0	90.40	319.24	7,007.0	407.0	-2,553.9	2,326.4	1.38	-0.81	1.11
8,457.0	91.10	319.59	7,006.1	455.6	-2,595.5	2,388.4	1.22	1.09	0.55
8,520.0	89.87	319.24	7,005.6	503.4	-2,636.5	2,449.4	2.03	-1.95	-0.56
8,583.0	90.75	319.24	7,005.3	551.1	-2,677.6	2,510.4	1.40	1.40	0.00
8,647.0	90.22	318.88	7,004.7	599.5	-2,719.5	2,572.5	1.00	-0.83	-0.56
8,710.0	90.92	318.97	7,004.1	647.0	-2,760.9	2,633.6	1.12	1.11	0.14
8,774.0	90.22	319.24	7,003.5	695.3	-2,802.8	2,695.7	1.17	-1.09	0.42
8,837.0	91.10	319.24	7,002.7	743.1	-2,844.0	2,756.7	1.40	1.40	0.00
8,900.0	89.96	319.41	7,002.2	790.8	-2,885.0	2,817.8	1.83	-1.81	0.27
8,964.0	90.75	318.97	7,001.8	839.3	-2,926.8	2,879.8	1.41	1.23	-0.69
9,027.0	90.04	319.15	7,001.3	886.9	-2,968.1	2,940.9	1.16	-1.13	0.29
9,091.0	90.75	318.62	7,000.9	935.1	-3,010.2	3,003.0	1.38	1.11	-0.83
9,154.0	90.04	318.80	7,000.4	982.4	-3,051.8	3,064.2	1.16	-1.13	0.29
9,218.0	91.01	318.80	6,999.9	1,030.6	-3,093.9	3,126.3	1.52	1.52	0.00
9,281.0	90.57	319.50	6,999.5	1,078.2	-3,135.1	3,187.4	1.31	-0.70	1.11
9,344.0	91.63	319.76	6,997.8	1,126.2	-3,175.9	3,248.3	1.73	1.68	0.41
9,408.0	90.57	319.74	6,995.6	1,175.2	-3,217.1	3,310.1	1.74	-1.66	0.55
9,470.0	91.28	319.24	6,995.6	1,222.4	-3,257.2	3,370.1	1.81	1.15	-1.40

RECEIVED
Office of Oil and Gas

FEB 12 2015



Scientific Drilling International
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Howell 1H
Project:	Mary Prospect	TVD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Site:	Howell Pad	MD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Well:	Howell 1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Northeast District

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,534.0	89.96	318.53	6,994.9	1,270.6	-3,299.3	3,432.2	2.34	-2.06	-1.11
9,597.0	90.92	318.62	6,994.4	1,317.9	-3,341.0	3,493.4	1.53	1.52	0.14
9,661.0	89.43	318.62	6,994.2	1,365.9	-3,383.3	3,555.6	2.33	-2.33	0.00
9,724.0	90.31	318.71	6,994.3	1,413.2	-3,424.9	3,616.8	1.40	1.40	0.14
9,788.0	91.36	318.36	6,993.4	1,461.2	-3,467.3	3,679.0	1.73	1.64	-0.55
9,851.0	92.15	318.27	6,991.5	1,508.2	-3,509.2	3,740.3	1.26	1.25	-0.14
9,915.0	90.48	318.36	6,990.0	1,556.0	-3,551.7	3,802.5	2.61	-2.61	0.14
9,979.0	91.19	317.83	6,989.1	1,603.6	-3,594.5	3,864.9	1.38	1.11	-0.83
10,042.0	92.59	318.18	6,987.0	1,650.4	-3,636.6	3,926.2	2.29	2.22	0.56
10,105.0	91.28	318.80	6,984.9	1,697.5	-3,678.3	3,987.4	2.30	-2.08	0.98
10,169.0	90.84	318.71	6,983.7	1,745.7	-3,720.5	4,049.5	0.70	-0.69	-0.14
10,232.0	91.54	318.36	6,982.4	1,792.9	-3,762.2	4,110.8	1.24	1.11	-0.56
10,296.0	90.57	319.76	6,981.2	1,841.2	-3,804.1	4,172.8	2.66	-1.52	2.19
10,359.0	90.31	321.08	6,980.7	1,889.7	-3,844.3	4,233.5	2.14	-0.41	2.10
10,422.0	91.01	320.64	6,980.0	1,938.6	-3,884.0	4,294.1	1.31	1.11	-0.70
10,485.0	89.60	320.20	6,979.6	1,987.2	-3,924.2	4,354.8	2.34	-2.24	-0.70
10,549.0	90.66	320.03	6,979.5	2,036.3	-3,965.2	4,416.6	1.68	1.66	-0.27
10,612.0	91.89	320.47	6,978.1	2,084.7	-4,005.5	4,477.4	2.07	1.95	0.70
10,676.0	90.57	320.20	6,976.7	2,133.9	-4,046.3	4,539.0	2.11	-2.06	-0.42
10,740.0	91.45	319.59	6,975.6	2,182.9	-4,087.5	4,600.9	1.67	1.38	-0.95
10,803.0	92.07	319.15	6,973.7	2,230.7	-4,128.6	4,661.9	1.21	0.98	-0.70
10,867.0	90.57	318.27	6,972.2	2,278.7	-4,170.8	4,724.0	2.72	-2.34	-1.38
10,931.0	91.36	318.18	6,971.1	2,326.5	-4,213.4	4,786.3	1.24	1.23	-0.14
10,995.0	89.87	318.01	6,970.4	2,374.1	-4,256.1	4,848.6	2.34	-2.33	-0.27
11,058.0	91.10	317.92	6,969.9	2,420.9	-4,298.3	4,910.0	1.96	1.95	-0.14
11,121.0	91.10	316.25	6,968.7	2,467.0	-4,341.2	4,971.5	2.65	0.00	-2.65
11,184.0	92.42	316.16	6,966.7	2,512.5	-4,384.8	5,033.3	2.10	2.10	-0.14
11,247.0	93.21	315.63	6,963.6	2,557.7	-4,428.6	5,095.1	1.51	1.25	-0.84
11,311.0	90.84	316.69	6,961.4	2,603.8	-4,472.9	5,157.8	4.06	-3.70	1.66
11,374.0	89.25	317.21	6,961.3	2,649.8	-4,515.9	5,219.4	2.66	-2.52	0.83
11,438.0	89.96	317.13	6,961.8	2,696.8	-4,559.4	5,282.0	1.12	1.11	-0.13
11,501.0	91.01	316.60	6,961.2	2,742.7	-4,602.5	5,343.6	1.87	1.67	-0.84
11,565.0	91.28	315.81	6,960.0	2,788.9	-4,646.8	5,406.4	1.30	0.42	-1.23
11,628.0	89.52	315.37	6,959.5	2,833.9	-4,690.8	5,468.3	2.88	-2.79	-0.70
11,690.0	90.04	316.69	6,959.8	2,878.5	-4,733.9	5,529.1	2.29	0.84	2.13
11,753.0	90.92	316.16	6,959.2	2,924.2	-4,777.3	5,590.9	1.63	1.40	-0.84
11,817.0	89.87	317.74	6,958.8	2,970.9	-4,821.0	5,653.5	2.96	-1.64	2.47
11,880.0	89.78	320.29	6,959.0	3,018.5	-4,862.3	5,714.6	4.05	-0.14	4.05
11,943.0	90.75	319.85	6,958.7	3,066.8	-4,902.7	5,775.4	1.69	1.54	-0.70
12,006.0	91.45	319.68	6,957.5	3,114.9	-4,943.4	5,836.3	1.14	1.11	-0.27
12,069.0	89.87	320.99	6,956.8	3,163.4	-4,983.6	5,897.0	3.26	-2.51	2.08
12,132.0	90.66	320.64	6,956.3	3,212.2	-5,023.4	5,957.6	1.37	1.25	-0.56
12,196.0	91.28	320.38	6,955.4	3,261.0	-5,064.1	6,019.3	1.05	0.97	-0.41



Company:	Stone Energy	Local Co-ordinate Reference:	Well Howell 1H
Project:	Mary Prospect	TVD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Site:	Howell Pad	MD Reference:	GL 1302' & KB 18' @ 1320.0usft (Saxon 141)
Well:	Howell 1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Northeast District

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,260.0	90.31	321.96	6,954.5	3,311.4	-5,104.3	6,080.7	2.90	-1.52	2.47
12,323.0	90.92	321.52	6,953.8	3,360.9	-5,143.3	6,141.0	1.19	0.97	-0.70
12,386.0	89.78	321.87	6,953.4	3,410.3	-5,182.3	6,201.3	1.89	-1.81	0.56
12,450.0	90.48	321.52	6,953.3	3,460.6	-5,222.0	6,262.6	1.22	1.09	-0.55
12,511.0	90.92	320.82	6,952.5	3,508.1	-5,260.2	6,321.2	1.36	0.72	-1.15
12,574.0	89.87	320.99	6,952.1	3,557.0	-5,300.0	6,381.8	1.69	-1.67	0.27
12,637.0	90.57	320.64	6,951.9	3,605.8	-5,339.8	6,442.4	1.24	1.11	-0.56
12,701.0	91.19	320.29	6,950.9	3,655.2	-5,380.5	6,504.0	1.11	0.97	-0.55
12,764.0	90.04	321.08	6,950.2	3,703.9	-5,420.4	6,564.7	2.21	-1.83	1.25
12,826.0	91.01	320.91	6,949.6	3,752.1	-5,459.4	6,624.2	1.59	1.56	-0.27
12,890.0	91.63	320.29	6,948.2	3,801.5	-5,500.0	6,685.9	1.37	0.97	-0.97
12,953.0	89.96	320.03	6,947.3	3,849.9	-5,540.4	6,746.6	2.68	-2.65	-0.41
12,978.0	90.22	319.85	6,947.3	3,869.0	-5,556.5	6,770.8	1.26	1.04	-0.72
Last SDI MWD Survey									
13,045.0	90.22	319.85	6,947.0	3,920.2	-5,599.7	6,835.5	0.00	0.00	0.00
Projection to Bit									

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
103.0	103.0	0.3	-0.4	First SDI Gyro Survey
5,670.4	5,573.0	-96.1	-689.3	Last SDI Gyro Survey
5,717.0	5,616.5	-97.6	-705.8	First SDI MWD Survey
12,978.0	6,947.3	3,869.0	-5,556.5	Last SDI MWD Survey
13,045.0	6,947.0	3,920.2	-5,599.7	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____

RECEIVED
Office of Oil and Gas

FEB 12 2015

WV Department of
Environmental Protection