



Musgrave Unit 1H
Ritchie County WV
 Northing: 14275923.00
 Easting: 1640941.11
 As Drilled



To convert Magnetic North to Grid, Subtract 8.35°
 To convert True North to Grid, Subtract 0.00°

Azimuths to Grid North
 True North: 0.00°
 Magnetic North: -8.35°
 Magnetic Field
 Strength: 52183.1snT
 Dip Angle: 66.84°
 Date: 5/4/2015
 Model: BGGM2014

Patterson 347: GL 1120' + KB 25' @ 1145.0usft
 Gr: 1120.0

WELL DETAILS Musgrave Unit 1H						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Ground Level
0.0	0.0	14275923.00	1640941.11	39° 18' 47.034 N	98° 59' 53.325 W	1120.0

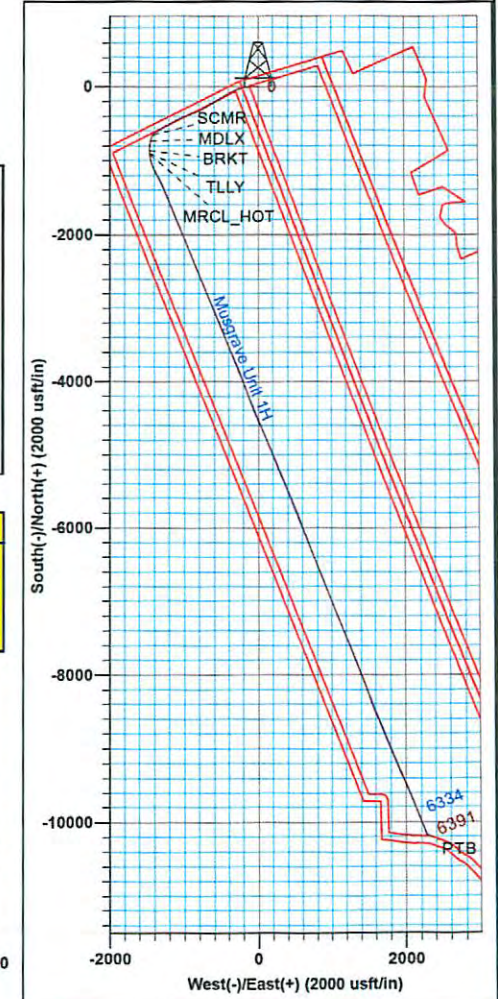
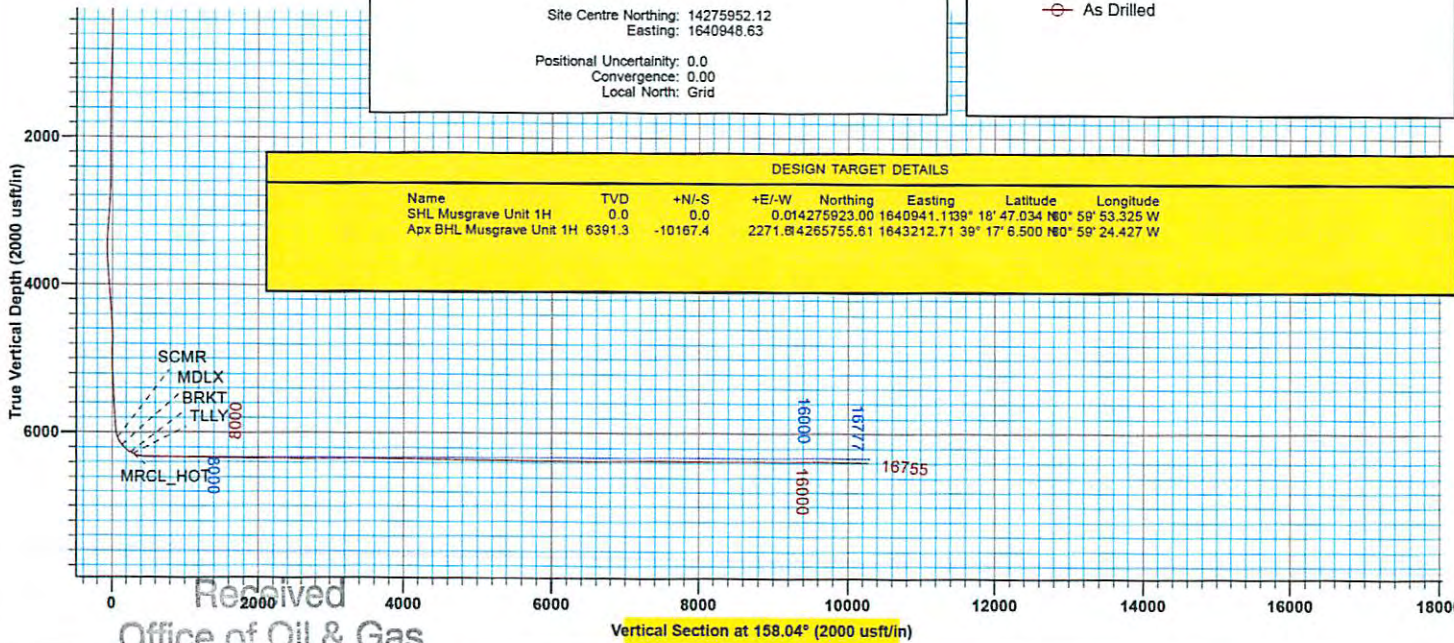
Genie Lightfoot
 9:23, May 20 2015
 Scientific Drilling
 11220 NW 10th Street
 Yukon OK 73099

PROJECT DETAILS: Ritchie County WV
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

LEGEND
 + Musgrave Unit 1H, Original Wellpath, Plan 7 V0
 ⊗ As Drilled

SITE DETAILS: Walnut West Pad: Noland/Musgrave/Schmidle
 Site Centre Northing: 14275952.12
 Easting: 1640948.63
 Positional Uncertainty: 0.0
 Convergence: 0.00
 Local North: Grid

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Musgrave Unit 1H	0.0	0.0	0.0	14275923.00	1640941.11	39° 18' 47.034 N	98° 59' 53.325 W
Apx BHL Musgrave Unit 1H	6391.3	-10167.4	2271.8	14265755.61	1643212.71	39° 17' 6.500 N	98° 59' 24.427 W



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Antero

Ritchie County WV
Walnut West Pad: Noland/Musgrave/Schmidle
Musgrave Unit 1H
Original Wellpath

Design: As Drilled

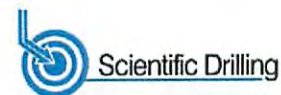
EOW Completion Report

19 May, 2015

Received
Office of Oil & Gas
JAN 13 2016



02/05/2016



Company:	Antero	Local Co-ordinate Reference:	Well Musgrave Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Project	Ritchie County WV, Ritchie County WV, WV North		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Walnut West Pad: Noland/Musgrave/Schmidle				
Site Position:		Northing:	14,275,952.12 usft	Latitude:	39° 18' 47.322 N
From:	Map	Easting:	1,640,948.63 usft	Longitude:	80° 59' 53.229 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.00 °

Well	Musgrave Unit 1H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,275,923.00 usft	Latitude:	39° 18' 47.034 N
	+E/-W	0.0 usft	Easting:	1,640,941.11 usft	Longitude:	80° 59' 53.325 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,145.0 usft	Ground Level:	1,120.0 usft

Wellbore	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	5/4/2015	-8.35	66.84	52,183

Design	As Drilled				
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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	158.04

Survey Program	Date 5/19/2015				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
112.0	5,839.0	Survey #5 Def Gyro to KOP (Original Well)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
5,839.0	16,755.0	Survey #6 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
112.0	0.09	23.85	112.0	0.1	0.0	-0.1	0.08
137.0	0.12	23.85	137.0	0.1	0.1	-0.1	0.12
162.0	0.24	52.06	162.0	0.2	0.1	-0.1	0.58
187.0	0.14	353.62	187.0	0.2	0.1	-0.2	0.82
212.0	0.11	7.07	212.0	0.3	0.1	-0.2	0.17
237.0	0.09	6.00	237.0	0.3	0.1	-0.3	0.08
262.0	0.10	351.31	262.0	0.4	0.1	-0.3	0.10
287.0	0.04	34.08	287.0	0.4	0.1	-0.3	0.30
312.0	0.03	67.95	312.0	0.4	0.2	-0.3	0.09
337.0	0.06	301.09	337.0	0.4	0.2	-0.3	0.33

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Company:	Antero	Local Co-ordinate Reference:	Well Musgrave Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)		
362.0	0.06	274.15	362.0	0.4	0.1	-0.4	0.11		
387.0	0.07	294.73	387.0	0.4	0.1	-0.4	0.10		
412.0	0.15	304.98	412.0	0.5	0.1	-0.4	0.33		
437.0	0.16	294.20	437.0	0.5	0.0	-0.5	0.12		
462.0	0.12	216.53	462.0	0.5	0.0	-0.5	0.71		
487.0	0.13	240.30	487.0	0.5	-0.1	-0.5	0.21		
512.0	0.23	209.36	512.0	0.4	-0.1	-0.4	0.54		
537.0	0.32	218.56	537.0	0.3	-0.2	-0.4	0.40		
562.0	0.41	224.21	562.0	0.2	-0.3	-0.3	0.39		
587.0	0.42	228.51	587.0	0.1	-0.4	-0.2	0.13		
612.0	0.88	244.09	612.0	-0.1	-0.7	-0.2	1.95		
637.0	1.32	246.03	637.0	-0.3	-1.1	-0.2	1.77		
662.0	1.68	247.30	662.0	-0.5	-1.7	-0.1	1.45		
687.0	2.33	252.14	687.0	-0.8	-2.5	-0.2	2.68		
712.0	2.87	253.70	711.9	-1.2	-3.6	-0.3	2.18		
737.0	3.54	256.59	736.9	-1.5	-5.0	-0.4	2.76		
762.0	3.95	259.53	761.8	-1.9	-6.6	-0.7	1.81		
787.0	4.43	260.70	786.8	-2.2	-8.4	-1.1	1.95		
812.0	4.61	261.52	811.7	-2.5	-10.3	-1.6	0.76		
837.0	5.01	264.06	836.6	-2.7	-12.4	-2.1	1.81		
862.0	5.32	265.78	861.5	-2.9	-14.6	-2.7	1.39		
887.0	5.58	268.42	886.4	-3.1	-17.0	-3.5	1.44		
912.0	5.76	270.23	911.3	-3.1	-19.5	-4.4	1.01		
937.0	5.84	270.87	936.2	-3.1	-22.0	-5.4	0.41		
962.0	5.93	270.59	961.0	-3.0	-24.6	-6.4	0.38		
987.0	5.95	270.92	985.9	-3.0	-27.2	-7.4	0.16		
1,012.0	5.79	271.93	1,010.8	-2.9	-29.7	-8.4	0.76		
1,037.0	5.51	273.30	1,035.6	-2.8	-32.2	-9.4	1.24		
1,062.0	5.39	274.13	1,060.5	-2.7	-34.5	-10.4	0.57		
1,087.0	4.79	274.92	1,085.4	-2.5	-36.8	-11.4	2.42		
1,112.0	4.55	275.25	1,110.3	-2.3	-38.8	-12.4	0.97		
1,137.0	4.23	274.48	1,135.3	-2.2	-40.7	-13.2	1.30		
1,162.0	4.05	274.16	1,160.2	-2.0	-42.5	-14.0	0.73		
1,187.0	3.76	274.96	1,185.1	-1.9	-44.2	-14.8	1.18		
1,212.0	3.44	275.32	1,210.1	-1.7	-45.7	-15.5	1.28		
1,237.0	3.11	276.62	1,235.1	-1.6	-47.2	-16.2	1.35		
1,262.0	2.91	276.89	1,260.0	-1.4	-48.5	-16.8	0.80		
1,287.0	2.63	277.30	1,285.0	-1.3	-49.7	-17.4	1.12		
1,312.0	2.40	278.21	1,310.0	-1.1	-50.8	-17.9	0.93		
1,337.0	2.11	276.97	1,334.9	-1.0	-51.7	-18.4	1.18		
1,362.0	1.99	278.22	1,359.9	-0.9	-52.6	-18.8	0.51		
1,387.0	1.75	276.81	1,384.9	-0.8	-53.4	-19.1	0.98		
1,412.0	1.52	277.87	1,409.9	-0.7	-54.1	-19.6	0.93		
1,437.0	1.25	272.79	1,434.9	-0.6	-54.7	-19.9	1.19		

Received
Office of Oil & Gas
JAN 13 2016

Company:	Antero	Local Co-ordinate Reference:	Well Musgrave Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)		
1,462.0	1.13	272.20	1,459.9	-0.6	-55.3	-20.1	0.48		
1,487.0	1.14	271.23	1,484.9	-0.6	-55.7	-20.3	0.09		
1,512.0	0.99	269.23	1,509.9	-0.6	-56.2	-20.5	0.62		
1,537.0	0.78	260.26	1,534.9	-0.6	-56.6	-20.6	1.00		
1,562.0	0.77	267.29	1,559.9	-0.7	-56.9	-20.7	0.38		
1,587.0	0.76	262.31	1,584.9	-0.7	-57.3	-20.8	0.27		
1,612.0	0.74	260.60	1,609.9	-0.7	-57.6	-20.8	0.12		
1,637.0	0.73	261.17	1,634.9	-0.8	-57.9	-20.9	0.05		
1,662.0	0.77	261.53	1,659.9	-0.8	-58.2	-21.0	0.16		
1,687.0	0.68	260.68	1,684.9	-0.9	-58.5	-21.1	0.36		
1,712.0	0.72	260.09	1,709.9	-0.9	-58.8	-21.1	0.16		
1,737.0	0.72	264.05	1,734.9	-1.0	-59.2	-21.2	0.20		
1,762.0	0.73	268.51	1,759.9	-1.0	-59.5	-21.3	0.23		
1,787.0	0.73	275.25	1,784.9	-1.0	-59.8	-21.4	0.34		
1,812.0	0.73	270.81	1,809.9	-1.0	-60.1	-21.6	0.23		
1,837.0	0.69	271.07	1,834.9	-1.0	-60.4	-21.7	0.16		
1,862.0	0.64	270.68	1,859.9	-1.0	-60.7	-21.8	0.20		
1,887.0	0.64	274.21	1,884.9	-1.0	-61.0	-21.9	0.16		
1,912.0	0.64	267.96	1,909.8	-1.0	-61.3	-22.0	0.28		
1,937.0	0.62	268.12	1,934.8	-1.0	-61.5	-22.1	0.08		
1,962.0	0.52	266.84	1,959.8	-1.0	-61.8	-22.2	0.40		
1,987.0	0.50	261.21	1,984.8	-1.0	-62.0	-22.3	0.22		
2,012.0	0.50	269.67	2,009.8	-1.0	-62.2	-22.3	0.30		
2,037.0	0.48	263.23	2,034.8	-1.0	-62.4	-22.4	0.23		
2,062.0	0.44	265.10	2,059.8	-1.0	-62.6	-22.5	0.17		
2,087.0	0.42	268.26	2,084.8	-1.1	-62.8	-22.5	0.12		
2,112.0	0.42	270.21	2,109.8	-1.1	-63.0	-22.6	0.06		
2,137.0	0.38	261.67	2,134.8	-1.1	-63.2	-22.6	0.29		
2,162.0	0.32	261.48	2,159.8	-1.1	-63.3	-22.7	0.24		
2,187.0	0.26	262.78	2,184.8	-1.1	-63.5	-22.7	0.24		
2,212.0	0.29	280.04	2,209.8	-1.1	-63.6	-22.7	0.35		
2,237.0	0.23	305.16	2,234.8	-1.1	-63.7	-22.8	0.51		
2,262.0	0.29	301.42	2,259.8	-1.0	-63.8	-22.9	0.25		
2,287.0	0.33	297.60	2,284.8	-0.9	-63.9	-23.0	0.18		
2,312.0	0.41	286.73	2,309.8	-0.9	-64.0	-23.1	0.42		
2,337.0	0.36	281.47	2,334.8	-0.8	-64.2	-23.2	0.24		
2,362.0	0.23	273.62	2,359.8	-0.8	-64.3	-23.3	0.54		
2,387.0	0.23	289.19	2,384.8	-0.8	-64.4	-23.4	0.25		
2,412.0	0.13	271.96	2,409.8	-0.8	-64.5	-23.4	0.45		
2,437.0	0.38	292.96	2,434.8	-0.7	-64.6	-23.5	1.05		
2,462.0	0.38	281.61	2,459.8	-0.7	-64.8	-23.6	0.30		
2,487.0	0.38	300.71	2,484.8	-0.6	-64.9	-23.7	0.50		
2,512.0	0.33	281.66	2,509.8	-0.6	-65.1	-23.8	0.51		
2,537.0	0.33	257.88	2,534.8	-0.6	-65.2	-23.8	0.54		
2,562.0	0.98	221.52	2,559.8	-0.8	-65.4	-23.8	2.96		

Received
Office of Oil & Gas
JAN 13 2016



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Musgrave Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
2,587.0	2.10	220.06	2,584.8	-1.3	-65.8	-23.4	4.48
2,612.0	2.59	229.64	2,609.8	-2.0	-66.6	-23.1	2.50
2,637.0	3.03	238.21	2,634.8	-2.7	-67.6	-22.8	2.43
2,662.0	3.69	261.25	2,659.7	-3.2	-68.9	-22.8	5.96
2,687.0	4.39	272.17	2,684.7	-3.3	-70.7	-23.4	4.15
2,712.0	5.33	275.80	2,709.6	-3.1	-72.8	-24.3	3.95
2,737.0	5.78	276.31	2,734.5	-2.8	-75.2	-25.5	1.81
2,762.0	6.25	275.59	2,759.3	-2.6	-77.8	-26.7	1.90
2,787.0	7.35	274.89	2,784.1	-2.3	-80.7	-28.1	4.41
2,812.0	7.99	272.02	2,808.9	-2.1	-84.1	-29.5	2.98
2,837.0	8.67	269.25	2,833.7	-2.1	-87.7	-30.9	3.16
2,862.0	9.08	266.37	2,858.4	-2.2	-91.5	-32.2	2.42
2,887.0	9.78	265.13	2,883.0	-2.5	-95.6	-33.4	2.92
2,912.0	10.48	265.40	2,907.6	-2.9	-100.0	-34.7	2.81
2,937.0	11.15	266.51	2,932.2	-3.2	-104.7	-36.2	2.81
2,962.0	12.07	266.99	2,956.7	-3.5	-109.7	-37.8	3.70
2,987.0	12.89	266.37	2,981.1	-3.8	-115.1	-39.5	3.32
3,012.0	13.81	265.75	3,005.4	-4.2	-120.9	-41.3	3.72
3,037.0	14.62	264.73	3,029.6	-4.7	-127.0	-43.1	3.39
3,062.0	15.27	263.43	3,053.8	-5.4	-133.4	-44.9	2.93
3,087.0	16.01	262.54	3,077.9	-6.2	-140.1	-46.6	3.11
3,112.0	16.40	261.47	3,101.9	-7.2	-147.0	-48.3	1.96
3,137.0	17.11	260.97	3,125.8	-8.3	-154.1	-49.9	2.90
3,162.0	17.99	259.68	3,149.7	-9.6	-161.5	-51.5	3.85
3,187.0	18.46	258.99	3,173.4	-11.0	-169.2	-53.1	2.07
3,212.0	18.85	258.35	3,197.1	-12.6	-177.1	-54.6	1.76
3,237.0	19.55	258.20	3,220.7	-14.2	-185.1	-56.0	2.81
3,262.0	20.13	258.04	3,244.2	-16.0	-193.4	-57.5	2.33
3,287.0	20.59	258.18	3,267.7	-17.8	-201.9	-59.0	1.85
3,312.0	21.24	258.03	3,291.0	-19.6	-210.7	-60.6	2.61
3,337.0	21.65	257.61	3,314.3	-21.6	-219.6	-62.1	1.75
3,362.0	22.03	257.32	3,337.5	-23.6	-228.7	-63.7	1.58
3,387.0	22.83	256.27	3,360.6	-25.8	-238.0	-65.1	3.58
3,412.0	23.62	255.06	3,383.6	-28.2	-247.5	-66.4	3.69
3,437.0	24.31	253.07	3,406.4	-31.0	-257.3	-67.5	4.25
3,462.0	25.26	251.33	3,429.1	-34.2	-267.3	-68.2	4.79
3,487.0	25.86	250.72	3,451.7	-37.7	-277.5	-68.8	2.62
3,512.0	26.30	249.89	3,474.1	-41.4	-287.8	-69.2	2.29
3,537.0	27.09	248.24	3,496.4	-45.4	-298.3	-69.4	4.83
3,562.0	27.67	247.05	3,518.6	-49.8	-308.9	-69.3	3.19
3,587.0	27.84	246.50	3,540.8	-54.4	-319.6	-69.1	1.23
3,612.0	27.72	245.90	3,562.9	-59.1	-330.3	-68.7	1.22
3,637.0	27.10	245.38	3,585.1	-63.8	-340.8	-68.2	2.66
3,662.0	27.06	244.57	3,607.3	-68.6	-351.1	-67.6	1.48

Received
Office of Oil & Gas
JAN 13 2016

Company:	Antero	Local Co-ordinate Reference:	Well Musgrave Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
3,687.0	26.98	243.62	3,629.6	-73.6	-361.3	-66.8	1.76	
3,712.0	27.01	242.54	3,651.9	-78.7	-371.4	-65.9	1.96	
3,737.0	27.11	241.48	3,674.2	-84.1	-381.5	-64.7	1.97	
3,762.0	27.26	240.79	3,696.4	-89.6	-391.5	-63.3	1.40	
3,787.0	26.99	240.13	3,718.6	-95.2	-401.4	-61.8	1.62	
3,812.0	26.99	239.84	3,740.9	-100.9	-411.2	-60.2	0.53	
3,837.0	26.75	238.99	3,763.2	-106.6	-420.9	-58.5	1.81	
3,862.0	26.46	238.33	3,785.6	-112.5	-430.5	-56.7	1.66	
3,887.0	25.95	237.95	3,808.0	-118.3	-439.9	-54.8	2.15	
3,912.0	25.65	237.68	3,830.5	-124.1	-449.1	-52.9	1.29	
3,937.0	25.55	237.63	3,853.1	-129.9	-458.2	-50.9	0.41	
3,962.0	25.43	237.79	3,875.6	-135.6	-467.3	-49.0	0.55	
3,987.0	25.04	237.49	3,898.2	-141.3	-476.3	-47.1	1.64	
4,012.0	24.99	237.39	3,920.9	-147.0	-485.2	-45.1	0.26	
4,037.0	24.98	237.75	3,943.6	-152.7	-494.1	-43.2	0.61	
4,062.0	25.08	238.22	3,966.2	-158.3	-503.1	-41.3	0.89	
4,087.0	24.89	238.78	3,988.9	-163.8	-512.1	-39.6	1.21	
4,112.0	24.51	238.56	4,011.6	-169.2	-521.0	-37.9	1.56	
4,137.0	24.24	238.67	4,034.3	-174.6	-529.8	-36.2	1.10	
4,162.0	24.34	238.84	4,057.1	-179.9	-538.6	-34.5	0.49	
4,187.0	24.60	239.22	4,079.9	-185.3	-547.5	-32.9	1.22	
4,212.0	24.70	239.50	4,102.6	-190.6	-556.5	-31.3	0.61	
4,237.0	24.90	239.66	4,125.3	-195.9	-565.5	-29.8	0.84	
4,262.0	24.98	239.71	4,148.0	-201.2	-574.6	-28.3	0.33	
4,287.0	25.25	239.61	4,170.6	-206.6	-583.8	-26.7	1.09	
4,312.0	25.64	239.58	4,193.2	-212.0	-593.0	-25.1	1.56	
4,337.0	25.88	239.58	4,215.7	-217.5	-602.4	-23.5	0.96	
4,362.0	26.13	239.71	4,238.2	-223.0	-611.9	-21.9	1.03	
4,387.0	25.91	239.45	4,260.6	-228.6	-621.3	-20.3	0.99	
4,412.0	26.06	239.36	4,283.1	-234.2	-630.7	-18.7	0.62	
4,437.0	26.22	239.25	4,305.6	-239.8	-640.2	-17.0	0.67	
4,462.0	26.27	238.94	4,328.0	-245.5	-649.7	-15.3	0.58	
4,487.0	26.27	238.85	4,350.4	-251.2	-659.2	-13.5	0.16	
4,512.0	26.49	239.00	4,372.8	-256.9	-668.7	-11.8	0.92	
4,537.0	26.78	239.34	4,395.1	-262.7	-678.3	-10.1	1.31	
4,562.0	26.65	239.49	4,417.5	-268.4	-688.0	-8.4	0.59	
4,587.0	25.82	238.99	4,439.9	-274.0	-697.5	-6.7	3.44	
4,612.0	25.00	237.92	4,462.5	-279.6	-706.6	-4.9	3.76	
4,637.0	24.82	237.96	4,485.1	-285.2	-715.6	-3.0	0.72	
4,662.0	24.44	237.90	4,507.9	-290.8	-724.4	-1.2	1.52	
4,687.0	24.44	237.98	4,530.6	-296.3	-733.1	0.6	0.13	
4,712.0	24.49	239.03	4,553.4	-301.7	-742.0	2.3	1.75	
4,737.0	24.66	239.74	4,576.1	-307.0	-750.9	3.9	1.36	
4,762.0	25.01	240.05	4,598.8	-312.2	-760.0	5.4	1.49	

Received
Office of Oil & Gas
JAN 13 2016

Company:	Antero	Local Co-ordinate Reference:	Well Musgrave Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)		
4,787.0	25.16	241.03	4,621.5	-317.4	-769.2	6.7	1.77		
4,812.0	25.36	242.47	4,644.1	-322.5	-778.6	7.9	2.58		
4,837.0	25.48	243.62	4,666.6	-327.4	-788.2	8.8	2.03		
4,862.0	25.71	245.95	4,689.2	-332.0	-798.0	9.5	4.13		
4,887.0	26.18	248.18	4,711.7	-336.2	-808.0	9.6	4.33		
4,912.0	26.75	250.09	4,734.1	-340.2	-818.4	9.4	4.10		
4,937.0	27.17	251.53	4,756.3	-343.9	-829.2	8.9	3.11		
4,962.0	28.26	252.64	4,778.5	-347.5	-840.2	8.1	4.82		
4,987.0	28.58	252.78	4,800.5	-351.0	-851.6	7.1	1.31		
5,012.0	29.13	252.35	4,822.4	-354.6	-863.1	6.1	2.35		
5,037.0	29.65	251.79	4,844.1	-358.4	-874.8	5.3	2.35		
5,062.0	29.72	251.12	4,865.9	-362.3	-886.5	4.5	1.36		
5,087.0	29.37	250.13	4,887.6	-366.4	-898.1	4.0	2.40		
5,112.0	29.43	249.49	4,909.4	-370.7	-909.6	3.6	1.28		
5,137.0	29.90	249.42	4,931.1	-375.0	-921.2	3.3	1.89		
5,162.0	30.75	248.56	4,952.7	-379.5	-933.0	3.1	3.82		
5,187.0	31.20	248.07	4,974.1	-384.3	-945.0	3.0	2.06		
5,212.0	31.39	247.90	4,995.5	-389.2	-957.0	3.0	0.84		
5,237.0	31.01	247.44	5,016.9	-394.1	-969.0	3.1	1.79		
5,262.0	30.60	246.96	5,038.3	-399.0	-980.8	3.3	1.91		
5,287.0	30.20	246.42	5,059.9	-404.0	-992.4	3.6	1.94		
5,312.0	30.04	245.66	5,081.5	-409.1	-1,003.9	4.0	1.65		
5,337.0	29.50	245.09	5,103.2	-414.3	-1,015.2	4.6	2.44		
5,362.0	29.14	244.42	5,125.0	-419.5	-1,026.2	5.3	1.95		
5,387.0	28.73	243.59	5,146.9	-424.8	-1,037.1	6.2	2.30		
5,412.0	28.46	243.02	5,168.9	-430.2	-1,047.8	7.2	1.54		
5,437.0	28.51	242.38	5,190.8	-435.7	-1,058.4	8.3	1.24		
5,462.0	28.12	242.00	5,212.8	-441.2	-1,068.9	9.5	1.72		
5,487.0	27.40	241.58	5,235.0	-446.7	-1,079.1	10.7	2.98		
5,512.0	26.46	241.84	5,257.2	-452.1	-1,089.1	12.0	3.79		
5,537.0	25.74	242.38	5,279.7	-457.2	-1,098.8	13.1	3.03		
5,562.0	25.04	241.92	5,302.3	-462.2	-1,108.3	14.2	2.91		
5,587.0	24.62	241.55	5,325.0	-467.2	-1,117.6	15.4	1.79		
5,612.0	24.13	240.78	5,347.7	-472.2	-1,126.6	16.6	2.34		
5,637.0	23.59	239.73	5,370.6	-477.2	-1,135.4	18.0	2.75		
5,662.0	23.68	239.90	5,393.5	-482.2	-1,144.0	19.4	0.45		
5,687.0	24.22	240.26	5,416.4	-487.3	-1,152.8	20.8	2.24		
5,712.0	24.75	241.25	5,439.1	-492.4	-1,161.9	22.1	2.68		
5,737.0	24.40	240.97	5,461.8	-497.4	-1,171.0	23.4	1.48		
5,762.0	24.14	242.13	5,484.6	-502.3	-1,180.0	24.6	2.17		
5,787.0	23.31	243.37	5,507.5	-506.9	-1,189.0	25.5	3.87		
5,812.0	22.87	242.69	5,530.5	-511.3	-1,197.7	26.3	2.06		
5,837.0	23.25	242.42	5,553.5	-515.8	-1,206.4	27.3	1.58		
5,839.0	23.28	242.40	5,555.4	-516.2	-1,207.1	27.4	1.55		

Received
Office of Oil & Gas
JAN 13 2016



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Musgrave Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
5,903.0	22.94	241.00	5,614.2	-528.1	-1,229.2	30.1	1.01	
5,966.0	22.28	239.14	5,672.4	-540.2	-1,250.2	33.5	1.54	
5,998.0	21.95	237.23	5,702.0	-546.5	-1,260.4	35.5	2.47	
6,060.0	22.25	239.77	5,759.5	-558.7	-1,280.3	39.4	1.62	
6,092.0	21.94	239.11	5,789.1	-564.8	-1,290.7	41.2	1.24	
6,155.0	21.73	239.42	5,847.6	-576.8	-1,310.8	44.8	0.38	
6,186.0	22.82	238.02	5,876.3	-582.9	-1,320.9	46.7	3.91	
6,217.0	26.15	236.69	5,904.5	-589.9	-1,331.7	49.1	10.89	
6,249.0	29.56	239.28	5,932.8	-597.8	-1,344.3	51.7	11.31	
6,280.0	31.92	240.20	5,959.4	-605.7	-1,358.0	53.9	7.76	
6,311.0	33.41	237.18	5,985.5	-614.4	-1,372.3	56.7	7.12	
6,343.0	34.27	229.76	6,012.1	-625.0	-1,386.6	61.2	13.18	
6,374.0	35.74	224.51	6,037.5	-637.1	-1,399.6	67.5	10.81	
6,405.0	36.55	217.95	6,062.6	-650.9	-1,411.6	75.8	12.75	
6,416.0	36.93	215.06	6,071.4	-656.2	-1,415.6	79.2	16.11	
SCMR								
6,437.0	37.84	209.69	6,088.1	-666.9	-1,422.4	86.6	16.11	
6,468.0	39.72	205.87	6,112.2	-684.1	-1,431.4	99.2	9.81	
6,500.0	41.42	199.89	6,136.6	-703.3	-1,439.5	113.9	13.26	
6,531.0	43.60	195.35	6,159.4	-723.2	-1,445.8	130.1	12.14	
6,548.0	45.04	193.14	6,171.6	-734.7	-1,448.7	139.7	12.41	
MDLX								
6,562.0	46.26	191.41	6,181.4	-744.5	-1,450.8	148.0	12.41	
6,594.0	49.46	188.98	6,202.8	-767.9	-1,455.0	168.0	11.47	
6,625.0	52.32	185.77	6,222.4	-791.7	-1,458.1	189.0	12.23	
6,657.0	55.58	183.13	6,241.2	-817.5	-1,460.1	212.2	12.18	
6,688.0	59.07	181.14	6,257.9	-843.6	-1,461.1	236.0	12.49	
6,714.0	62.08	178.55	6,270.7	-866.2	-1,461.0	257.0	14.48	
BRKT								
6,719.0	62.67	178.07	6,273.0	-870.7	-1,460.9	261.2	14.48	
6,751.0	66.25	176.05	6,286.8	-899.5	-1,459.4	288.5	12.55	
6,753.0	66.48	175.90	6,287.6	-901.3	-1,459.2	290.2	13.55	
TLLY								
6,766.0	68.00	174.93	6,292.7	-913.3	-1,458.3	301.7	13.55	
MRCL_HOT								
6,782.0	69.88	173.77	6,298.4	-928.1	-1,456.8	316.0	13.55	
6,813.0	73.55	171.17	6,308.1	-957.3	-1,453.0	344.5	14.27	
6,845.0	76.42	168.33	6,316.4	-987.7	-1,447.5	374.7	12.41	
6,876.0	80.10	165.01	6,322.7	-1,017.2	-1,440.4	404.7	15.84	
6,907.0	84.16	161.83	6,327.0	-1,046.6	-1,431.7	435.3	16.58	
6,966.0	90.30	156.83	6,329.8	-1,101.7	-1,410.9	494.2	13.41	
6,997.0	90.84	154.25	6,329.5	-1,129.9	-1,398.1	525.1	8.50	
7,060.0	90.40	153.20	6,328.8	-1,186.4	-1,370.2	588.0	1.81	
7,154.0	88.63	152.93	6,329.6	-1,270.2	-1,327.6	681.6	1.90	
7,248.0	89.33	155.56	6,331.3	-1,354.9	-1,286.8	775.4	2.89	

Received
Office of Oil & Gas
JAN 13 2016



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Musgrave Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,342.0	89.30	155.94	6,332.4	-1,440.6	-1,248.2	869.3	0.41
7,436.0	89.13	158.18	6,333.7	-1,527.1	-1,211.5	963.3	2.39
7,530.0	88.73	157.58	6,335.5	-1,614.2	-1,176.1	1,057.2	0.77
7,624.0	89.60	157.60	6,336.9	-1,701.1	-1,140.3	1,151.2	0.93
7,718.0	89.03	157.27	6,338.0	-1,787.9	-1,104.2	1,245.2	0.70
7,812.0	88.82	157.62	6,339.7	-1,874.7	-1,068.2	1,339.2	0.43
7,906.0	88.02	155.96	6,342.3	-1,961.0	-1,031.2	1,433.1	1.96
8,001.0	88.89	156.84	6,344.9	-2,048.0	-993.1	1,528.1	1.30
8,095.0	89.90	159.42	6,345.9	-2,135.3	-958.1	1,622.0	2.95
8,189.0	90.24	159.43	6,345.8	-2,223.3	-925.1	1,716.0	0.36
8,283.0	90.44	159.54	6,345.2	-2,311.3	-892.2	1,810.0	0.24
8,377.0	89.63	158.45	6,345.2	-2,399.1	-858.5	1,904.0	1.44
8,471.0	89.66	158.23	6,345.7	-2,486.4	-823.8	1,998.0	0.24
8,565.0	89.73	157.43	6,346.2	-2,573.5	-788.3	2,092.0	0.85
8,660.0	89.73	157.27	6,346.7	-2,661.1	-751.7	2,187.0	0.17
8,754.0	90.07	157.42	6,346.9	-2,747.9	-715.5	2,280.9	0.40
8,848.0	89.73	155.63	6,347.0	-2,834.1	-678.1	2,374.9	1.94
8,942.0	88.49	155.70	6,348.5	-2,919.7	-639.3	2,468.8	1.32
9,036.0	88.22	157.51	6,351.2	-3,006.0	-602.0	2,562.7	1.95
9,130.0	90.27	158.95	6,352.4	-3,093.3	-567.2	2,656.7	2.66
9,224.0	90.03	159.65	6,352.2	-3,181.2	-533.9	2,750.7	0.79
9,318.0	89.90	158.53	6,352.2	-3,269.0	-500.4	2,844.7	1.20
9,413.0	90.23	158.68	6,352.1	-3,357.4	-465.7	2,939.7	0.38
9,507.0	90.27	158.30	6,351.7	-3,444.9	-431.3	3,033.7	0.41
9,601.0	88.79	155.99	6,352.5	-3,531.5	-394.8	3,127.7	2.92
9,696.0	90.30	157.81	6,353.2	-3,618.9	-357.5	3,222.6	2.49
9,790.0	89.87	156.75	6,353.1	-3,705.6	-321.2	3,316.6	1.22
9,883.0	90.13	157.77	6,353.1	-3,791.4	-285.2	3,409.6	1.13
9,977.0	90.00	156.82	6,353.0	-3,878.1	-249.0	3,503.6	1.02
10,071.0	90.50	160.54	6,352.6	-3,965.6	-214.8	3,597.6	3.99
10,165.0	90.47	160.92	6,351.8	-4,054.3	-183.8	3,691.5	0.41
10,259.0	90.07	160.77	6,351.3	-4,143.1	-152.9	3,785.3	0.45
10,354.0	90.00	161.54	6,351.3	-4,233.0	-122.2	3,880.2	0.81
10,448.0	89.03	159.43	6,352.1	-4,321.6	-90.8	3,974.1	2.47
10,542.0	88.89	157.82	6,353.8	-4,409.2	-56.6	4,068.1	1.72
10,636.0	88.08	156.99	6,356.3	-4,495.9	-20.5	4,162.0	1.23
10,730.0	89.87	156.00	6,357.9	-4,582.1	17.0	4,256.0	2.16
10,824.0	88.93	154.56	6,358.9	-4,667.5	56.3	4,349.9	1.83
10,918.0	89.90	155.96	6,359.9	-4,752.8	95.6	4,443.8	1.81
11,012.0	87.71	156.23	6,361.9	-4,838.7	133.7	4,537.7	2.35
11,106.0	88.32	156.57	6,365.1	-4,924.8	171.3	4,631.6	0.74
11,200.0	89.50	157.70	6,366.9	-5,011.4	207.8	4,725.5	1.74
11,295.0	89.80	158.59	6,367.5	-5,099.6	243.2	4,820.5	0.99
11,389.0	89.73	158.39	6,367.9	-5,187.1	277.7	4,914.5	0.23

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Musgrave Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
11,483.0	89.39	156.64	6,368.6	-5,273.9	313.6	5,008.5	1.90	
11,577.0	90.44	158.28	6,368.7	-5,360.7	349.6	5,102.5	2.07	
11,671.0	89.76	157.73	6,368.6	-5,447.9	384.9	5,196.5	0.93	
11,765.0	89.29	157.67	6,369.3	-5,534.8	420.5	5,290.5	0.50	
11,859.0	89.63	158.49	6,370.2	-5,622.0	455.6	5,384.5	0.94	
11,953.0	88.93	156.81	6,371.4	-5,709.0	491.4	5,478.5	1.94	
12,048.0	89.36	157.71	6,372.8	-5,796.6	528.1	5,573.5	1.05	
12,142.0	89.90	159.39	6,373.4	-5,884.1	562.4	5,667.5	1.88	
12,236.0	89.50	158.93	6,373.9	-5,971.9	595.9	5,761.4	0.65	
12,330.0	88.82	159.38	6,375.3	-6,059.7	629.3	5,855.4	0.87	
12,424.0	89.56	158.78	6,376.6	-6,147.5	662.9	5,949.4	1.01	
12,519.0	89.63	158.23	6,377.3	-6,235.9	697.7	6,044.4	0.58	
12,613.0	89.87	160.13	6,377.7	-6,323.8	731.1	6,138.4	2.04	
12,707.0	90.03	159.92	6,377.8	-6,412.1	763.2	6,232.3	0.28	
12,801.0	89.97	159.19	6,377.8	-6,500.2	796.1	6,326.3	0.78	
12,895.0	89.63	157.92	6,378.1	-6,587.7	830.4	6,420.3	1.40	
12,989.0	88.63	157.40	6,379.5	-6,674.6	866.1	6,514.3	1.20	
13,083.0	90.84	158.54	6,380.0	-6,761.8	901.4	6,608.2	2.65	
13,177.0	90.60	157.98	6,378.8	-6,849.1	936.2	6,702.2	0.65	
13,272.0	89.60	156.49	6,378.6	-6,936.7	973.0	6,797.2	1.89	
13,365.0	90.67	158.22	6,378.4	-7,022.5	1,008.8	6,890.2	2.19	
13,460.0	90.03	157.60	6,377.8	-7,110.5	1,044.5	6,985.2	0.94	
13,554.0	89.26	157.07	6,378.4	-7,197.2	1,080.7	7,079.2	0.99	
13,648.0	90.80	158.42	6,378.4	-7,284.2	1,116.3	7,173.2	2.18	
13,742.0	90.10	157.45	6,377.6	-7,371.4	1,151.6	7,267.2	1.27	
13,836.0	89.90	157.08	6,377.6	-7,458.0	1,188.0	7,361.2	0.45	
13,930.0	89.03	156.25	6,378.5	-7,544.4	1,225.2	7,455.1	1.28	
14,024.0	90.10	157.98	6,379.2	-7,630.9	1,261.7	7,549.1	2.16	
14,119.0	89.97	157.76	6,379.2	-7,718.9	1,297.5	7,644.1	0.27	
14,213.0	90.10	157.55	6,379.1	-7,805.9	1,333.3	7,738.1	0.26	
14,307.0	90.07	159.50	6,379.0	-7,893.4	1,367.7	7,832.1	2.07	
14,401.0	89.77	159.71	6,379.1	-7,981.5	1,400.4	7,926.1	0.39	
14,495.0	89.76	159.56	6,379.5	-8,069.6	1,433.1	8,020.0	0.16	
14,589.0	89.60	160.99	6,380.0	-8,158.1	1,464.9	8,114.0	1.53	
14,684.0	90.84	160.35	6,379.6	-8,247.7	1,496.3	8,208.9	1.47	
14,778.0	90.44	160.33	6,378.6	-8,336.2	1,527.9	8,302.8	0.43	
14,872.0	89.53	157.66	6,378.6	-8,424.0	1,561.6	8,396.8	3.00	
14,966.0	89.03	156.88	6,379.8	-8,510.7	1,597.9	8,490.7	0.99	
15,060.0	90.13	157.65	6,380.5	-8,597.4	1,634.3	8,584.7	1.43	
15,154.0	89.83	157.80	6,380.5	-8,684.3	1,669.9	8,678.7	0.36	
15,249.0	89.93	158.47	6,380.7	-8,772.5	1,705.3	8,773.7	0.71	
15,343.0	89.53	158.54	6,381.2	-8,860.0	1,739.7	8,867.7	0.43	
15,437.0	89.70	157.28	6,381.8	-8,947.1	1,775.1	8,961.7	1.35	
15,532.0	89.20	158.38	6,382.7	-9,035.0	1,810.9	9,056.7	1.27	

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Project:	Ritchie County WV	TVD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Site:	Walnut West Pad: Noland/Musgrave/Schmidle	MD Reference:	Patterson 347: GL 1120' + KB 25' @ 1145.0usft
Well:	Musgrave Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
15,626.0	90.03	157.72	6,383.3	-9,122.2	1,846.1	9,150.7	1.13	
15,721.0	90.17	157.03	6,383.2	-9,209.9	1,882.6	9,245.7	0.74	
15,816.0	89.56	156.86	6,383.4	-9,297.3	1,919.8	9,340.7	0.67	
15,910.0	90.77	156.08	6,383.1	-9,383.5	1,957.3	9,434.6	1.53	
16,004.0	90.67	154.48	6,381.9	-9,468.9	1,996.6	9,528.5	1.71	
16,099.0	90.17	156.10	6,381.2	-9,555.2	2,036.3	9,623.4	1.78	
16,193.0	88.93	159.72	6,382.0	-9,642.3	2,071.7	9,717.4	4.07	
16,255.0	89.15	158.75	6,383.0	-9,700.2	2,093.7	9,779.4	1.60	
16,288.0	88.26	159.27	6,383.8	-9,731.0	2,105.5	9,812.4	3.12	
16,382.0	88.29	159.30	6,386.6	-9,818.9	2,138.7	9,906.3	0.05	
16,476.0	89.36	159.03	6,388.5	-9,906.7	2,172.1	10,000.2	1.17	
16,571.0	89.33	158.83	6,389.6	-9,995.4	2,206.3	10,095.2	0.21	
16,665.0	89.46	159.11	6,390.6	-10,083.1	2,240.0	10,189.2	0.33	
16,693.0	89.60	159.61	6,390.8	-10,109.3	2,249.9	10,217.2	1.85	
16,755.0	89.63	159.42	6,391.3	-10,167.4	2,271.6	10,279.2	0.31	
PTB								

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
6,416.0	6,071.4	-656.2	-1,415.6	SCMR	
6,548.0	6,171.6	-734.7	-1,448.7	MDLX	
6,714.0	6,270.7	-866.2	-1,461.0	BRKT	
6,753.0	6,287.6	-901.3	-1,459.2	TLLY	
6,766.0	6,292.7	-913.3	-1,458.3	MRCL_HOT	
16,755.0	6,391.3	-10,167.4	2,271.6	PTB	

Checked By: _____ Approved By: _____ Date: _____

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