

# GRMR Oil & Gas, LLC

Project: Moffat County, CO  
Site: Myers  
Well: #19-11HA  
Wellbore: OH  
Design: OH



Azimuths to True North  
Magnetic North: 9.67°

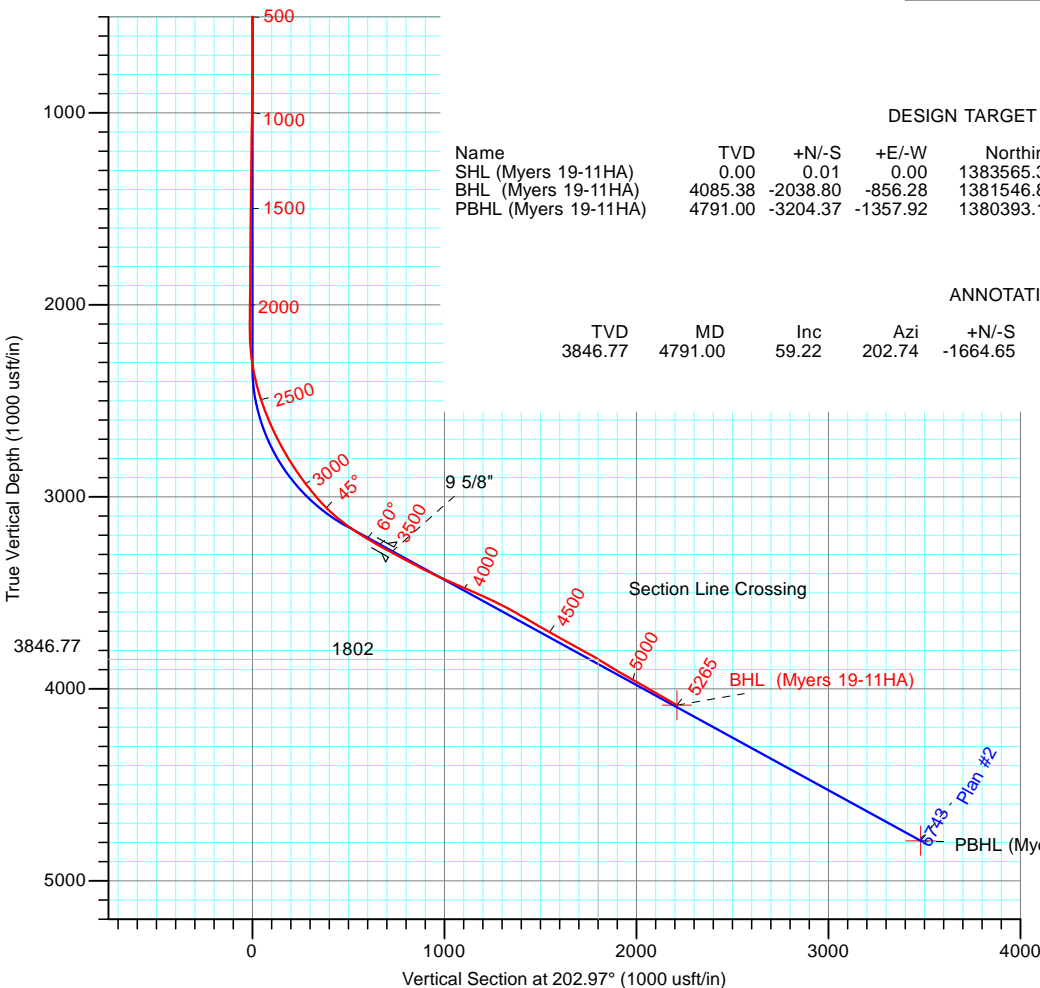
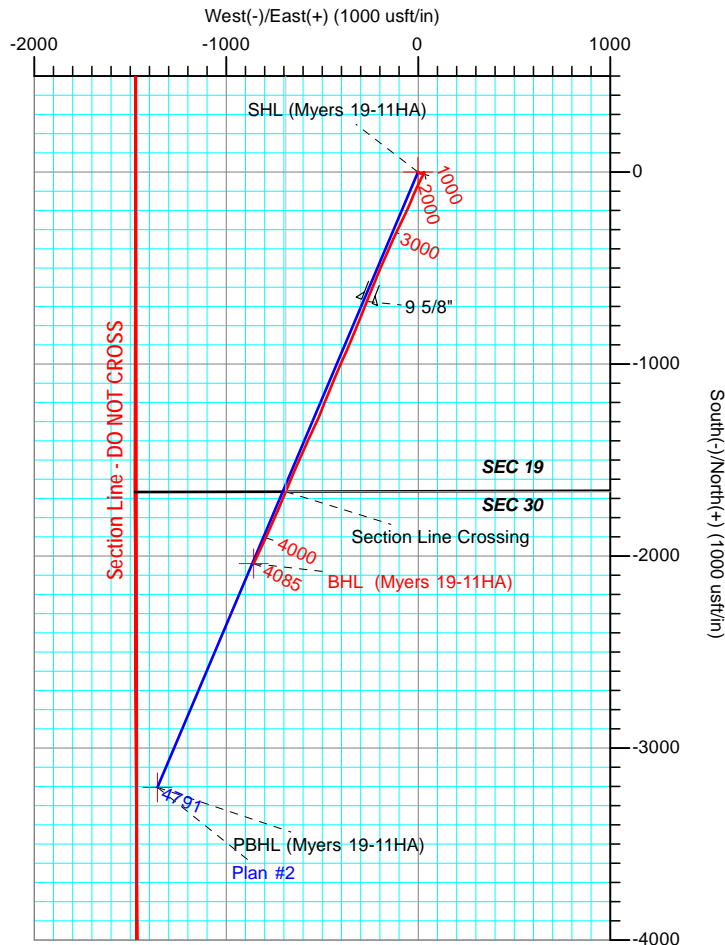
Magnetic Field  
Strength: 52206.3snT  
Dip Angle: 66.44°  
Date: 9/30/2015  
Model: BGGM2015

PROJECT DETAILS: Moffat County, CO

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone

## ACTUAL CASING DETAILS

TVD	MD	Name	Size
3288.23	3576.00	9 5/8"	9-5/8



## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL (Myers 19-11HA)	0.00	0.01	0.00	1383565.39	2431229.48	40° 22' 5.939 N	107° 32' 29.092 W
BHL (Myers 19-11HA)	4085.38	-2038.80	-856.28	1381546.83	2430326.49	40° 21' 45.791 N	107° 32' 40.154 W
PBHL (Myers 19-11HA)	4791.00	-3204.37	-1357.92	1380393.12	2429798.16	40° 21' 34.272 N	107° 32' 46.634 W

## ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
3846.77	4791.00	59.22	202.74	-1664.65	-689.92	1801.90	1858.63	Section Line Crossing



LEAM DRILLING SYSTEMS LLC  
2010 East Davis, Conroe, Texas 77301  
Phone: 936/756-7577, Fax: 936/756-7595

Design: OH (#19-11HA/OH)  
Myers  
Created By: Nora Tucker  
Date: 17:26, October 12 2015  
Approved: \_\_\_\_\_ Date: \_\_\_\_\_

# LEAM Drilling Systems LLC

## Survey Report

<b>Company:</b>	GRMR Oil & Gas, LLC	<b>Local Co-ordinate Reference:</b>	Well #19-11HA
<b>Project:</b>	Moffat County, CO	<b>TVD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Site:</b>	Myers	<b>MD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Well:</b>	#19-11HA	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi_User Db

<b>Project</b>	Moffat County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site	Myers				
Site Position:		Northing:	1,383,565.39 usft	Latitude:	40° 22' 5.939 N
From:	Map	Easting:	2,431,229.48 usft	Longitude:	107° 32' 29.092 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.32 °

Well	#19-11HA					
Well Position	+N/-S	0.00 usft	Northing:	1,383,565.38 usft	Latitude:	40° 22' 5.939 N
	+E/-W	0.00 usft	Easting:	2,431,229.48 usft	Longitude:	107° 32' 29.092 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,343.71 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2015	9/30/2015	9.67	66.44	52,206

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	202.97	

<b>Survey Program</b>	<b>Date</b>	10/12/2015			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
135.00	5,173.00	Survey #1 (OH)	MWD-ISCWSA	MWD - Standard	
5,265.00	5,265.00	Survey #2 (OH)	Project	Projection	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
135.00	0.40	293.80	135.00	0.19	-0.43	-0.01	0.30	0.30	0.00	
225.00	0.30	234.10	225.00	0.18	-0.91	0.19	0.40	-0.11	-66.33	
315.00	0.50	162.60	315.00	-0.33	-0.98	0.69	0.55	0.22	-79.44	
408.00	0.90	145.70	407.99	-1.32	-0.45	1.40	0.48	0.43	-18.17	
499.00	1.30	118.50	498.97	-2.41	0.86	1.88	0.71	0.44	-29.89	
591.00	1.70	120.90	590.94	-3.61	2.95	2.17	0.44	0.43	2.61	
682.00	2.00	116.10	681.89	-5.00	5.53	2.44	0.37	0.33	-5.27	
778.00	2.40	109.20	777.82	-6.40	8.93	2.40	0.50	0.42	-7.19	
872.00	2.80	103.40	871.73	-7.58	13.03	1.89	0.51	0.43	-6.17	

# LEAM Drilling Systems LLC

## Survey Report

<b>Company:</b>	GRMR Oil & Gas, LLC	<b>Local Co-ordinate Reference:</b>	Well #19-11HA
<b>Project:</b>	Moffat County, CO	<b>TVD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Site:</b>	Myers	<b>MD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Well:</b>	#19-11HA	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi_User Db

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)
968.00	1.90	72.10	967.65	-7.63	16.82	0.46	1.60	-0.94	-32.60
1,063.00	2.40	57.30	1,062.58	-6.07	20.00	-2.21	0.78	0.53	-15.58
1,158.00	0.80	64.50	1,157.54	-4.71	22.27	-4.35	1.69	-1.68	7.58
1,253.00	0.60	92.40	1,252.53	-4.45	23.36	-5.02	0.41	-0.21	29.37
1,348.00	1.80	93.50	1,347.51	-4.56	25.35	-5.70	1.26	1.26	1.16
1,443.00	1.40	42.50	1,442.48	-3.79	27.62	-7.29	1.50	-0.42	-53.68
1,538.00	0.80	331.10	1,537.46	-2.36	28.09	-8.79	1.45	-0.63	-75.16
1,633.00	0.20	302.70	1,632.46	-1.69	27.63	-9.23	0.66	-0.63	-29.89
1,727.00	0.30	20.30	1,726.46	-1.37	27.57	-9.50	0.34	0.11	82.55
1,822.00	0.70	68.80	1,821.46	-0.92	28.20	-10.15	0.58	0.42	51.05
1,917.00	1.10	90.00	1,916.44	-0.71	29.65	-10.91	0.54	0.42	22.32
2,013.00	1.70	73.90	2,012.42	-0.32	31.94	-12.17	0.74	0.63	-16.77
2,108.00	0.30	108.60	2,107.40	-0.01	33.53	-13.08	1.54	-1.47	36.53
2,140.00	0.60	180.50	2,139.40	-0.20	33.61	-12.93	1.82	0.94	224.69
2,172.00	1.70	208.70	2,171.39	-0.79	33.38	-12.30	3.77	3.44	88.13
2,204.00	3.20	211.40	2,203.36	-1.97	32.69	-10.95	4.70	4.69	8.44
2,236.00	4.70	210.60	2,235.29	-3.86	31.56	-8.76	4.69	4.69	-2.50
2,268.00	6.60	208.60	2,267.13	-6.60	30.01	-5.63	5.97	5.94	-6.25
2,299.00	8.90	205.70	2,297.84	-10.32	28.12	-1.47	7.52	7.42	-9.35
2,331.00	10.40	208.10	2,329.39	-15.10	25.68	3.88	4.85	4.69	7.50
2,363.00	11.90	207.80	2,360.78	-20.57	22.78	10.05	4.69	4.69	-0.94
2,395.00	13.30	206.70	2,392.01	-26.78	19.59	17.01	4.44	4.38	-3.44
2,427.00	14.60	206.50	2,423.07	-33.68	16.14	24.71	4.07	4.06	-0.63
2,457.00	15.70	207.20	2,452.03	-40.67	12.59	32.53	3.72	3.67	2.33
2,488.00	17.40	206.40	2,481.74	-48.55	8.61	41.34	5.53	5.48	-2.58
2,520.00	19.10	206.20	2,512.13	-57.54	4.18	51.34	5.32	5.31	-0.63
2,552.00	20.90	205.60	2,542.20	-67.38	-0.60	62.27	5.66	5.63	-1.88
2,584.00	21.80	205.10	2,572.00	-77.91	-5.59	73.91	2.87	2.81	-1.56
2,616.00	23.10	203.40	2,601.58	-89.05	-10.60	86.13	4.54	4.06	-5.31
2,648.00	23.80	203.30	2,630.93	-100.74	-15.65	98.86	2.19	2.19	-0.31
2,679.00	24.80	203.10	2,659.19	-112.47	-20.68	111.62	3.24	3.23	-0.65
2,711.00	26.70	203.00	2,688.01	-125.26	-26.12	125.52	5.94	5.94	-0.31
2,743.00	28.20	203.00	2,716.40	-138.84	-31.88	140.27	4.69	4.69	0.00
2,775.00	29.10	203.30	2,744.49	-152.95	-37.91	155.62	2.85	2.81	0.94
2,807.00	30.20	204.00	2,772.30	-167.45	-44.27	171.44	3.60	3.44	2.19
2,839.00	31.10	204.10	2,799.83	-182.34	-50.91	187.75	2.82	2.81	0.31
2,871.00	32.30	204.30	2,827.05	-197.68	-57.81	204.57	3.76	3.75	0.63
2,902.00	33.60	204.30	2,853.06	-213.05	-64.75	221.42	4.19	4.19	0.00
2,934.00	34.90	205.10	2,879.51	-229.41	-72.27	239.42	4.30	4.06	2.50
2,966.00	35.90	205.40	2,905.60	-246.17	-80.18	257.94	3.17	3.13	0.94
2,998.00	37.30	206.20	2,931.29	-263.35	-88.49	277.00	4.62	4.38	2.50
3,029.00	38.50	206.50	2,955.75	-280.41	-96.94	296.01	3.92	3.87	0.97
3,061.00	40.00	206.10	2,980.53	-298.56	-105.91	316.22	4.75	4.69	-1.25

# LEAM Drilling Systems LLC

## Survey Report

<b>Company:</b>	GRMR Oil & Gas, LLC	<b>Local Co-ordinate Reference:</b>	Well #19-11HA
<b>Project:</b>	Moffat County, CO	<b>TVD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Site:</b>	Myers	<b>MD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Well:</b>	#19-11HA	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi_User Db

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)	
3,093.00	41.40	204.90	3,004.79	-317.40	-114.89	337.07	5.01	4.38	-3.75	
3,125.00	43.10	204.80	3,028.47	-336.92	-123.93	358.57	5.32	5.31	-0.31	
3,155.00	44.50	203.30	3,050.13	-355.88	-132.39	379.33	5.81	4.67	-5.00	
3,187.00	46.30	204.10	3,072.60	-376.74	-141.55	402.11	5.90	5.63	2.50	
3,219.00	47.90	203.90	3,094.38	-398.16	-151.08	425.55	5.02	5.00	-0.63	
3,251.00	50.10	203.70	3,115.37	-420.25	-160.83	449.69	6.89	6.88	-0.63	
3,282.00	52.40	203.70	3,134.77	-442.39	-170.54	473.87	7.42	7.42	0.00	
3,314.00	53.90	203.40	3,153.96	-465.86	-180.77	499.47	4.75	4.69	-0.94	
3,346.00	55.30	202.90	3,172.50	-489.85	-191.03	525.55	4.56	4.38	-1.56	
3,378.00	57.30	203.10	3,190.25	-514.35	-201.43	552.18	6.27	6.25	0.63	
3,410.00	59.20	203.50	3,207.09	-539.34	-212.19	579.38	6.03	5.94	1.25	
3,441.00	60.30	203.20	3,222.71	-563.93	-222.81	606.16	3.65	3.55	-0.97	
3,473.00	61.00	202.20	3,238.39	-589.66	-233.57	634.05	3.49	2.19	-3.13	
3,498.00	61.20	201.90	3,250.48	-609.94	-241.79	655.94	1.32	0.80	-1.20	
3,515.00	61.00	201.60	3,258.69	-623.77	-247.30	670.82	1.94	-1.18	-1.76	
3,576.00	61.08	201.35	3,288.23	-673.44	-266.84	724.17	0.39	0.14	-0.42	
9 5/8"										
3,587.00	61.10	201.30	3,293.54	-682.41	-270.34	733.80	0.39	0.14	-0.42	
3,681.00	62.10	201.70	3,338.25	-759.34	-300.65	816.46	1.13	1.06	0.43	
3,776.00	63.40	202.60	3,381.75	-837.56	-332.49	900.90	1.61	1.37	0.95	
3,870.00	65.00	203.50	3,422.66	-915.43	-365.63	985.53	1.91	1.70	0.96	
3,966.00	66.60	204.30	3,462.01	-995.48	-401.11	1,073.08	1.83	1.67	0.83	
4,061.00	66.50	202.20	3,499.82	-1,075.55	-435.51	1,160.22	2.03	-0.11	-2.21	
4,156.00	65.10	202.10	3,538.76	-1,155.80	-468.18	1,246.86	1.48	-1.47	-0.11	
4,252.00	61.80	202.10	3,581.67	-1,235.36	-500.48	1,332.72	3.44	-3.44	0.00	
4,347.00	59.20	205.00	3,628.45	-1,311.15	-533.49	1,415.38	3.81	-2.74	3.05	
4,449.00	60.90	204.20	3,679.37	-1,391.50	-570.27	1,503.72	1.80	1.67	-0.78	
4,544.00	60.30	204.30	3,726.01	-1,466.96	-604.26	1,586.46	0.64	-0.63	0.11	
4,638.00	61.50	203.70	3,771.72	-1,542.00	-637.67	1,668.58	1.39	1.28	-0.64	
4,734.00	60.60	202.80	3,818.19	-1,619.18	-670.83	1,752.58	1.25	-0.94	-0.94	
4,791.00	59.22	202.74	3,846.77	-1,664.65	-689.92	1,801.90	2.42	-2.42	-0.10	
Section Line Crossing										
4,829.00	58.30	202.70	3,866.48	-1,694.62	-702.47	1,834.39	2.42	-2.42	-0.11	
4,923.00	59.40	203.00	3,915.10	-1,768.75	-733.70	1,914.83	1.20	1.17	0.32	
5,017.00	61.00	203.80	3,961.81	-1,843.61	-766.10	1,996.40	1.86	1.70	0.85	
5,113.00	59.60	205.10	4,009.38	-1,919.51	-800.61	2,079.75	1.87	-1.46	1.35	
5,173.00	60.10	205.00	4,039.51	-1,966.52	-822.58	2,131.60	0.85	0.83	-0.17	
5,265.00	60.10	205.00	4,085.38	-2,038.80	-856.28	2,211.31	0.00	0.00	0.00	

# LEAM Drilling Systems LLC

## Survey Report

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<b>Project:</b>	Moffat County, CO	<b>TVD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Site:</b>	Myers	<b>MD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Well:</b>	#19-11HA	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi_User Db

Casing Points					
	Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
	3,576.00	3,288.23	9 5/8"	9-5/8	12-1/4

# **GRMR Oil & Gas, LLC**

**Moffat County, CO**

**Myers**

**#19-11HA**

**OH**

**Design: OH**

## **Survey Report - Geographic**

**12 October, 2015**

# LEAM Drilling Systems LLC

## Survey Report - Geographic

<b>Company:</b>	GRMR Oil & Gas, LLC	<b>Local Co-ordinate Reference:</b>	Well #19-11HA
<b>Project:</b>	Moffat County, CO	<b>TVD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
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<b>Well:</b>	#19-11HA	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi_User Db

<b>Project</b>	Moffat County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site	Myers				
Site Position:		Northing:	1,383,565.39 usft	Latitude:	40° 22' 5.939 N
From:	Map	Easting:	2,431,229.48 usft	Longitude:	107° 32' 29.092 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.32 °

Well	#19-11HA					
Well Position	+N/-S	0.00 usft	Northing:	1,383,565.38 usft	Latitude:	40° 22' 5.939 N
	+E/-W	0.00 usft	Easting:	2,431,229.48 usft	Longitude:	107° 32' 29.092 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,343.71 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2015	9/30/2015	9.67	66.44	52,206

<b>Design</b>	OH				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	202.97	

<b>Survey Program</b>	<b>Date</b>	10/12/2015			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
135.00	5,173.00	Survey #1 (OH)	MWD-ISCWSA	MWD - Standard	
5,265.00	5,265.00	Survey #2 (OH)	Project	Projection	

<b>Survey</b>									
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Map Northing (usft)</b>	<b>Map Easting (usft)</b>	<b>Latitude</b>	<b>Longitude</b>
0.00	0.00	0.00	0.00	0.00	0.00	1,383,565.38	2,431,229.48	40° 22' 5.939 N	107° 32' 29.092 W
135.00	0.40	293.80	135.00	0.19	-0.43	1,383,565.58	2,431,229.06	40° 22' 5.941 N	107° 32' 29.097 W
225.00	0.30	234.10	225.00	0.18	-0.91	1,383,565.58	2,431,228.58	40° 22' 5.940 N	107° 32' 29.104 W
315.00	0.50	162.60	315.00	-0.33	-0.98	1,383,565.07	2,431,228.49	40° 22' 5.935 N	107° 32' 29.104 W
408.00	0.90	145.70	407.99	-1.32	-0.45	1,383,564.07	2,431,229.00	40° 22' 5.926 N	107° 32' 29.098 W
499.00	1.30	118.50	498.97	-2.41	0.86	1,383,562.96	2,431,230.29	40° 22' 5.915 N	107° 32' 29.081 W
591.00	1.70	120.90	590.94	-3.61	2.95	1,383,561.71	2,431,232.35	40° 22' 5.903 N	107° 32' 29.054 W
682.00	2.00	116.10	681.89	-5.00	5.53	1,383,560.26	2,431,234.90	40° 22' 5.889 N	107° 32' 29.020 W
778.00	2.40	109.20	777.82	-6.40	8.93	1,383,558.78	2,431,238.27	40° 22' 5.875 N	107° 32' 28.976 W
872.00	2.80	103.40	871.73	-7.58	13.03	1,383,557.51	2,431,242.33	40° 22' 5.864 N	107° 32' 28.923 W
968.00	1.90	72.10	967.65	-7.63	16.82	1,383,557.37	2,431,246.13	40° 22' 5.863 N	107° 32' 28.874 W

# LEAM Drilling Systems LLC

## Survey Report - Geographic

<b>Company:</b>	GRMR Oil & Gas, LLC	<b>Local Co-ordinate Reference:</b>	Well #19-11HA
<b>Project:</b>	Moffat County, CO	<b>TVD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Site:</b>	Myers	<b>MD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Well:</b>	#19-11HA	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi_User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,063.00	2.40	57.30	1,062.58	-6.07	20.00	1,383,558.85	2,431,249.33	40° 22' 5.879 N	107° 32' 28.833 W
1,158.00	0.80	64.50	1,157.54	-4.71	22.27	1,383,560.16	2,431,251.64	40° 22' 5.892 N	107° 32' 28.804 W
1,253.00	0.60	92.40	1,252.53	-4.45	23.36	1,383,560.40	2,431,252.74	40° 22' 5.895 N	107° 32' 28.790 W
1,348.00	1.80	93.50	1,347.51	-4.56	25.35	1,383,560.24	2,431,254.72	40° 22' 5.894 N	107° 32' 28.764 W
1,443.00	1.40	42.50	1,442.48	-3.79	27.62	1,383,560.95	2,431,257.01	40° 22' 5.901 N	107° 32' 28.735 W
1,538.00	0.80	331.10	1,537.46	-2.36	28.09	1,383,562.38	2,431,257.51	40° 22' 5.915 N	107° 32' 28.729 W
1,633.00	0.20	302.70	1,632.46	-1.69	27.63	1,383,563.06	2,431,257.06	40° 22' 5.922 N	107° 32' 28.735 W
1,727.00	0.30	20.30	1,726.46	-1.37	27.57	1,383,563.38	2,431,257.02	40° 22' 5.925 N	107° 32' 28.736 W
1,822.00	0.70	68.80	1,821.46	-0.92	28.20	1,383,563.81	2,431,257.66	40° 22' 5.930 N	107° 32' 28.727 W
1,917.00	1.10	90.00	1,916.44	-0.71	29.65	1,383,563.99	2,431,259.11	40° 22' 5.932 N	107° 32' 28.709 W
2,013.00	1.70	73.90	2,012.42	-0.32	31.94	1,383,564.33	2,431,261.41	40° 22' 5.936 N	107° 32' 28.679 W
2,108.00	0.30	108.60	2,107.40	-0.01	33.53	1,383,564.60	2,431,263.01	40° 22' 5.939 N	107° 32' 28.659 W
2,140.00	0.60	180.50	2,139.40	-0.20	33.61	1,383,564.41	2,431,263.08	40° 22' 5.937 N	107° 32' 28.658 W
2,172.00	1.70	208.70	2,171.39	-0.79	33.38	1,383,563.83	2,431,262.84	40° 22' 5.931 N	107° 32' 28.660 W
2,204.00	3.20	211.40	2,203.36	-1.97	32.69	1,383,562.67	2,431,262.12	40° 22' 5.919 N	107° 32' 28.669 W
2,236.00	4.70	210.60	2,235.29	-3.86	31.56	1,383,560.80	2,431,260.94	40° 22' 5.901 N	107° 32' 28.684 W
2,268.00	6.60	208.60	2,267.13	-6.60	30.01	1,383,558.09	2,431,259.33	40° 22' 5.873 N	107° 32' 28.704 W
2,299.00	8.90	205.70	2,297.84	-10.32	28.12	1,383,554.41	2,431,257.35	40° 22' 5.837 N	107° 32' 28.729 W
2,331.00	10.40	208.10	2,329.39	-15.10	25.68	1,383,549.69	2,431,254.81	40° 22' 5.789 N	107° 32' 28.760 W
2,363.00	11.90	207.80	2,360.78	-20.57	22.78	1,383,544.29	2,431,251.79	40° 22' 5.735 N	107° 32' 28.797 W
2,395.00	13.30	206.70	2,392.01	-26.78	19.59	1,383,538.16	2,431,248.45	40° 22' 5.674 N	107° 32' 28.839 W
2,427.00	14.60	206.50	2,423.07	-33.68	16.14	1,383,531.34	2,431,244.84	40° 22' 5.606 N	107° 32' 28.883 W
2,457.00	15.70	207.20	2,452.03	-40.67	12.59	1,383,524.43	2,431,241.14	40° 22' 5.537 N	107° 32' 28.929 W
2,488.00	17.40	206.40	2,481.74	-48.55	8.61	1,383,516.64	2,431,236.98	40° 22' 5.459 N	107° 32' 28.980 W
2,520.00	19.10	206.20	2,512.13	-57.54	4.18	1,383,507.77	2,431,232.33	40° 22' 5.370 N	107° 32' 29.038 W
2,552.00	20.90	205.60	2,542.20	-67.38	-0.60	1,383,498.03	2,431,227.33	40° 22' 5.273 N	107° 32' 29.100 W
2,584.00	21.80	205.10	2,572.00	-77.91	-5.59	1,383,487.62	2,431,222.10	40° 22' 5.169 N	107° 32' 29.164 W
2,616.00	23.10	203.40	2,601.58	-89.05	-10.60	1,383,476.60	2,431,216.83	40° 22' 5.059 N	107° 32' 29.229 W
2,648.00	23.80	203.30	2,630.93	-100.74	-15.65	1,383,465.03	2,431,211.52	40° 22' 4.943 N	107° 32' 29.294 W
2,679.00	24.80	203.10	2,659.19	-112.47	-20.68	1,383,453.42	2,431,206.22	40° 22' 4.827 N	107° 32' 29.359 W
2,711.00	26.70	203.00	2,688.01	-125.26	-26.12	1,383,440.76	2,431,200.49	40° 22' 4.701 N	107° 32' 29.429 W
2,743.00	28.20	203.00	2,716.40	-138.84	-31.88	1,383,427.31	2,431,194.41	40° 22' 4.567 N	107° 32' 29.504 W
2,775.00	29.10	203.30	2,744.49	-152.95	-37.91	1,383,413.35	2,431,188.06	40° 22' 4.427 N	107° 32' 29.582 W
2,807.00	30.20	204.00	2,772.30	-167.45	-44.27	1,383,399.00	2,431,181.38	40° 22' 4.284 N	107° 32' 29.664 W
2,839.00	31.10	204.10	2,799.83	-182.34	-50.91	1,383,384.26	2,431,174.39	40° 22' 4.137 N	107° 32' 29.750 W
2,871.00	32.30	204.30	2,827.05	-197.68	-57.81	1,383,369.09	2,431,167.14	40° 22' 3.985 N	107° 32' 29.839 W
2,902.00	33.60	204.30	2,853.06	-213.05	-64.75	1,383,353.88	2,431,159.85	40° 22' 3.833 N	107° 32' 29.928 W
2,934.00	34.90	205.10	2,879.51	-229.41	-72.27	1,383,337.70	2,431,151.95	40° 22' 3.672 N	107° 32' 30.026 W
2,966.00	35.90	205.40	2,905.60	-246.17	-80.18	1,383,321.12	2,431,143.66	40° 22' 3.506 N	107° 32' 30.128 W
2,998.00	37.30	206.20	2,931.29	-263.35	-88.49	1,383,304.14	2,431,134.96	40° 22' 3.336 N	107° 32' 30.235 W
3,029.00	38.50	206.50	2,955.75	-280.41	-96.94	1,383,287.28	2,431,126.12	40° 22' 3.168 N	107° 32' 30.344 W
3,061.00	40.00	206.10	2,980.53	-298.56	-105.91	1,383,269.34	2,431,116.73	40° 22' 2.988 N	107° 32' 30.460 W
3,093.00	41.40	204.90	3,004.79	-317.40	-114.89	1,383,250.71	2,431,107.32	40° 22' 2.802 N	107° 32' 30.576 W
3,125.00	43.10	204.80	3,028.47	-336.92	-123.93	1,383,231.40	2,431,097.83	40° 22' 2.609 N	107° 32' 30.693 W
3,155.00	44.50	203.30	3,050.13	-355.88	-132.39	1,383,212.64	2,431,088.94	40° 22' 2.422 N	107° 32' 30.802 W
3,187.00	46.30	204.10	3,072.60	-376.74	-141.55	1,383,192.00	2,431,079.30	40° 22' 2.216 N	107° 32' 30.921 W
3,219.00	47.90	203.90	3,094.38	-398.16	-151.08	1,383,170.81	2,431,069.28	40° 22' 2.004 N	107° 32' 31.044 W
3,251.00	50.10	203.70	3,115.37	-420.25	-160.83	1,383,148.94	2,431,059.03	40° 22' 1.786 N	107° 32' 31.170 W
3,282.00	52.40	203.70	3,134.77	-442.39	-170.54	1,383,127.04	2,431,048.80	40° 22' 1.567 N	107° 32' 31.295 W
3,314.00	53.90	203.40	3,153.96	-465.86	-180.77	1,383,103.80	2,431,038.03	40° 22' 1.335 N	107° 32' 31.427 W
3,346.00	55.30	202.90	3,172.50	-489.85	-191.03	1,383,080.06	2,431,027.23	40° 22' 1.098 N	107° 32' 31.560 W
3,378.00	57.30	203.10	3,190.25	-514.35	-201.43	1,383,055.80	2,431,016.27	40° 22' 0.856 N	107° 32' 31.694 W
3,410.00	59.20	203.50	3,207.09	-539.34	-212.19	1,383,031.07	2,431,004.93	40° 22' 0.609 N	107° 32' 31.833 W
3,441.00	60.30	203.20	3,222.71	-563.93	-222.81	1,383,006.73	2,430,993.76	40° 22' 0.366 N	107° 32' 31.970 W
3,473.00	61.00	202.20	3,238.39	-589.66	-233.57	1,382,981.26	2,430,982.40	40° 22' 0.112 N	107° 32' 32.109 W



# LEAM Drilling Systems LLC

## Survey Report - Geographic

<b>Company:</b>	GRMR Oil & Gas, LLC	<b>Local Co-ordinate Reference:</b>	Well #19-11HA
<b>Project:</b>	Moffat County, CO	<b>TVD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Site:</b>	Myers	<b>MD Reference:</b>	GE 6343.71 + KB 18' @ 6361.70usft
<b>Well:</b>	#19-11HA	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM 5000.1 Multi_User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,498.00	61.20	201.90	3,250.48	-609.94	-241.79	1,382,961.17	2,430,973.72	40° 21' 59.911 N	107° 32' 32.216 W
3,515.00	61.00	201.60	3,258.69	-623.77	-247.30	1,382,947.47	2,430,967.89	40° 21' 59.775 N	107° 32' 32.287 W
3,576.00	61.08	201.35	3,288.23	-673.44	-266.84	1,382,898.27	2,430,947.21	40° 21' 59.284 N	107° 32' 32.539 W
9 5/8"									
3,587.00	61.10	201.30	3,293.54	-682.41	-270.34	1,382,889.38	2,430,943.51	40° 21' 59.195 N	107° 32' 32.584 W
3,681.00	62.10	201.70	3,338.25	-759.34	-300.65	1,382,813.17	2,430,911.44	40° 21' 58.435 N	107° 32' 32.976 W
3,776.00	63.40	202.60	3,381.75	-837.56	-332.49	1,382,735.70	2,430,877.80	40° 21' 57.662 N	107° 32' 33.387 W
3,870.00	65.00	203.50	3,422.66	-915.43	-365.63	1,382,658.62	2,430,842.88	40° 21' 56.892 N	107° 32' 33.815 W
3,966.00	66.60	204.30	3,462.01	-995.48	-401.11	1,382,579.40	2,430,805.57	40° 21' 56.101 N	107° 32' 34.274 W
4,061.00	66.50	202.20	3,499.82	-1,075.55	-435.51	1,382,500.15	2,430,769.33	40° 21' 55.310 N	107° 32' 34.718 W
4,156.00	65.10	202.10	3,538.76	-1,155.80	-468.18	1,382,420.67	2,430,734.82	40° 21' 54.517 N	107° 32' 35.140 W
4,252.00	61.80	202.10	3,581.67	-1,235.36	-500.48	1,382,341.87	2,430,700.70	40° 21' 53.731 N	107° 32' 35.558 W
4,347.00	59.20	205.00	3,628.45	-1,311.15	-533.49	1,382,266.86	2,430,665.96	40° 21' 52.982 N	107° 32' 35.984 W
4,449.00	60.90	204.20	3,679.37	-1,391.50	-570.27	1,382,187.38	2,430,627.33	40° 21' 52.188 N	107° 32' 36.459 W
4,544.00	60.30	204.30	3,726.01	-1,466.96	-604.26	1,382,112.72	2,430,591.61	40° 21' 51.442 N	107° 32' 36.898 W
4,638.00	61.50	203.70	3,771.72	-1,542.00	-637.67	1,382,038.47	2,430,556.49	40° 21' 50.700 N	107° 32' 37.330 W
4,734.00	60.60	202.80	3,818.19	-1,619.18	-670.83	1,381,962.08	2,430,521.56	40° 21' 49.938 N	107° 32' 37.758 W
4,791.00	59.22	202.74	3,846.77	-1,664.65	-689.92	1,381,917.06	2,430,501.43	40° 21' 49.488 N	107° 32' 38.005 W
Section Line Crossing									
4,829.00	58.30	202.70	3,866.48	-1,694.62	-702.47	1,381,887.38	2,430,488.20	40° 21' 49.192 N	107° 32' 38.167 W
4,923.00	59.40	203.00	3,915.10	-1,768.75	-733.70	1,381,813.99	2,430,455.26	40° 21' 48.460 N	107° 32' 38.570 W
5,017.00	61.00	203.80	3,961.81	-1,843.61	-766.10	1,381,739.90	2,430,421.15	40° 21' 47.720 N	107° 32' 38.989 W
5,113.00	59.60	205.10	4,009.38	-1,919.51	-800.61	1,381,664.81	2,430,384.90	40° 21' 46.970 N	107° 32' 39.435 W
5,173.00	60.10	205.00	4,039.51	-1,966.52	-822.58	1,381,618.32	2,430,361.86	40° 21' 46.505 N	107° 32' 39.719 W
5,265.00	60.10	205.00	4,085.38	-2,038.80	-856.28	1,381,546.83	2,430,326.50	40° 21' 45.791 N	107° 32' 40.154 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
3,576.00	3,288.23	9 5/8"	9-5/8	12-1/4	