

GRMR Oil & Gas, LLC
Myers 19-11HA
SHL: 1,663' FSL 1,472' FWL (NE/4 SW/4)
Sec. 19 T5N R90W
BHL: ±1,538' FNL ±110' FWL (SW/4 NW/4)
Sec. 30 T5N R90W
Moffat County, Colorado
Surface: Fee
Mineral Lease: Fee

Drilling Program

Please contact Mike Griffis with GRMR Oil & Gas, LLC at 720-235-5071 if there are any questions or concerns regarding this Drilling Program.

SURFACE ELEVATION – 6,346' (Ungraded ground elevation)

SURFACE FORMATION – Mancos –water possible

1. Formation Tops

The estimated depths at which the top and bottom of the anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

Formation	TVD	MD	Lithology
Mancos	Surface	Surface	Water/Gas
Base Morapos Creek	595'	595'	Gas/ Fresh Water
Niobrara	2,865'	2,900'	Oil/Gas
Toe Creek Bench	3,197'	3,425'	Gas/Water
Carlile	4,700'	6,553'	Oil/Gas
Total Depth	4,791'	6,742'	

All fresh water and prospectively valuable minerals encountered during drilling will be recorded by depth and adequately protected.

2. Operator's Minimum Specifications for Pressure Control Equipment

- A. A 13-5/8" BOP with a minimum pressure rating of 5,000 psi will be configured and tested according to COGCC regulations. Maximum anticipated surface pressure is 1,054 psi. (See attached schematic)
- B. All BOP connections subject to pressure shall be flanged, welded, or clamped.

3. Casing and Cementing Program**Casing Program:**

Interval (ft)	Hole Size (in)	Csg Sz (in)	Csg Wt (ppf)	Grade	CXN	Clpse (psi)	Burst (psi)	Tensile (kips)	Condition
0-60	30	20	104	X	Welded	1130	2730	514	New
0-700	17-1/2	13-3/8	54.40	J-55	ST&C	1130	2730	514	New
0-3444	12-1/4	9-5/8	40	J-55	LT&C	2570	3950	520	New
3294-6742	7-7/8	5-1/2	15.5	J-55	LT&C	4040	4810	217	New

Cementing Program:

		Surface	Intermediate 1	Production Liner
Hole Geometry	Csg OD	13.375	9.625	5.5
	Csg ID	12.615	8.835	4.778
	Hole Size	17.5	12.25	7.875
	Csg Depth	700	3444	6742
Lead Cement	Top (ft)	0	200	Uncemented
	Hole XS	100%	50%	
	Vol (ft^3)	601.6	1235.8	
	Wgt (ppg)	11.5	11.5	
	Yld (ft^3/sk)	2.74	2.74	
	Lead SX	220	460	
	Cmnt Type	Class G	Class G	
	Add:	0.1250 lbm Celloflake	0.1250 lbm Celloflake	
	Add:	0.25 lbm Sawdust	0.25 lbm Sawdust	
Tail Cement	Top (ft)	450	2944	
	Hole XS	100%	50%	
	Vol (ft^3)	386.5	254.1	
	Wgt (ppg)	13.5	13.5	
	Yld (ft^3/sk)	1.68	1.68	
	Tail SX	240	160	
	Cmnt Type	Class G	Class G	
	Add:	0.1250 lbm Celloflake	0.1250 lbm Celloflake	
	Add:	0.25 lbm Sawdust	0.25 lbm Sawdust	
	Add:			
	Add:			

Miscellaneous Casing Information (where applicable):

- A. All casing is designed to meet the following safety factor criteria; Collapse: 1.10, Burst: 1.10, Tension: 1.60
- B. Any change in the casing and cement design will be approved by the COGCC prior to running and cementing the casing string.
- C. All casing, except the conductor casing, or 5-1/2" slotted liner shall be new or reconditioned and tested. All casing shall meet or exceed API standards for new casing.
- D. The 5-1/2" slotted production liner will be set into open hole and left un-cemented. No liner top packer will be utilized.

4. Mud Program**Summary of anticipated drilling fluids by hole section.**

Interval (MD)	Hole Size (in)	Depth to (ft., MD)	Type	MW
Surface	17-1/2	700	FW/Gel	8.5
Intermediate	12-1/4	3444	FW/Gel	8.5
Production	7-7/8	6742	OB Foam	5.5

Oil Based Foam

- A. Oil based foam (Nitrogen/Foaming agent) will be used to drill the production portion of this well.
- B. Four phase separation will be used while drilling this hole section to:
 - o Control the well by modifying Equivalent Circulating Density (ECD)
 - o Separate and recycle the drilling fluid
 - o Cuttings will be dried using a shaker, contained in a steel bin, and hauled off to an approved OBM cuttings disposal facility
- C. Anticipated ECD is 5.5 #/gal.
- D. Mud tests will be performed a minimum of every 24 hours to determine, as applicable, density, viscosity, electrical stability, filtration, pH, etc.
- E. Sufficient quantities of mud weighting materials shall be maintained at the well site, at all times, for the purpose of assuring well control.
- F. Visual and electronic monitoring of the mud system will be done to determine volume changes.
- G. A flare system will be utilized and the design and installation shall be in accordance with COGCC regulations.
- H. A 30 mil liner will be placed underneath the rig and drilling fluid handling systems (including bulk storage). The liner will be bermed along the edges for containment.
- I. A "catch can" will be installed underneath the rotary table to catch drilling fluids from the rig floor.

5. Testing, Coring, and Logging

Mud Logging: Gas detection and mud return monitoring equipment shall be utilized from surface casing point to TD.

Coring: No cores planned.

Drillstem Tests: No DSTs planned.

Electric Logging: Intermediate casing point to surface casing point: AIT-TLD-GR-CNL-ML.

Directional Surveys: Gyro from intermediate casing point to surface.
MWD surveys every connection (31' +/-) in the curve and every 100' in the tangent section.

6. Abnormal Pressures and Hydrogen Sulfide

- A. Normal to subnormal pressure gradients expected throughout the well.
- B. Max expected BHP at TD is expected to be 1370 psi.
- C. Maximum expected BHT @ TD: ~135 deg F.
- D. No H₂S gas is anticipated.

7. Other Information

Additional well information:

- A. This well is expected to commence on or about March 1, 2015.
- B. This well designed to utilize an open hole completion (with a slotted or perforated liner). No fracture stimulation is planned.

5M BOP Schematic:

FILL LINE ABOVE THE UPPERMOST PREVENTER

