

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

5. Lease Serial No.
COC 066586

6. If Indian, Allottee or Tribe Name
N/A

7. If Unit or CA Agreement, Name and No.
NA

8. Lease Name and Well No.
Federal RG 22-14-298

9. API Well No.
Not Assigned

10. Field and Pool, or Exploratory
Sulphur Creek

11. Sec., T. R. M. or Blk. and Survey or Area
Section 14, T2S-R98W, 6th P.M.

12. County or Parish
Rio Blanco

13. State
CO

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone

2. Name of Operator
Williams Production RMT Co

3a. Address 1515 Arapahoe Street, Tower III Suite 1000
Denver, CO 80202

3b. Phone No. (include area code)
(303) 606-4342

4. Location of Well (Report location clearly and in accordance with any State requirements.)*

At surface 1790' FNL 2260' FEL SWNE (Lat. 39.880217, Long. 108.358331)

At proposed prod. zone 1816' FNL, 1936' FWL SENW (Lat. 39.880126, Long. 108.361784)

14. Distance in miles and direction from nearest town or post office*
Approximately 20 miles South East of Rangely, CO

15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)

1816' LL

16. No. of acres in lease
666.02

17. Spacing Unit dedicated to this well
Unspaced

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

Approx. 298'

19. Proposed Depth
11,113' (Lower Sego)

20. BLM/BIA Bond No. on file
NMB000396

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
6546.6' Graded Gr

22. Approximate date work will start*
08/01/2010

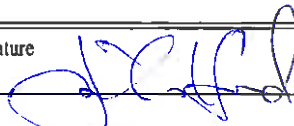
23. Estimated duration
18 mos.

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature



Name (Printed/Typed)
Jennifer Head

Date
05/12/2010

Title

Regulatory Team Lead, Highlands Asset Team

Approved by (Signature)

Name (Printed/Typed)

Date

Title

Office

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

WILLIAMS PRODUCTION RMT COMPANY
Surface Use Plan for Expansion of Existing Well Pad

Federal RG 32-14-298 Pad – SWNE Sec. 14, T2S-R98W
Onsite of proposed location: Not Required by BLM, Expansion of Existing Pad
Rio Blanco County, Colorado
Federal Lease COC066586

Proposed new wells from the Existing Federal RG 32-14-298 pad:

Federal RG 321-14-298

SHL: 1745' FNL, 2269' FEL, SWNE, 14-T2S-R98W
BHL: 424' FNL, 1953' FWL, SNENW, 14-T2S-R98W

Federal RG 322-14-298

SHL: 1767' FNL, 2264' FEL, SWNE, 14-T2S-R98W
BHL: 1518' FNL, 1940' FWL, SENW, 14-T2S-R98W

Federal RG 331-14-298

SHL: 1737' FNL, 2261' FEL, SWNE, 14-T2S-R98W
BHL: 245' FNL, 1948' FEL, NWNE, 14-T2S-R98W

Federal RG 332-14-298

SHL: 1767' FNL, 2254' FEL, SWNE, 14-T2S-R98W
BHL: 1655' FNL, 1930' FEL, SWNE, 14-T2S-R98W

Federal RG 333-14-298

SHL: 1812' FNL, 2245' FEL, SWNE, 14-T2S-R98W
BHL: 2423' FSL, 1911' FEL, NWSE, 14-T2S-R98W

Federal RG 421-14-298

SHL: 1752' FNL, 2267' FEL, SWNE, 14-T2S-R98W
BHL: 939' FNL, 1962' FWL, NENW, 14-T2S-R98W

Federal RG 422-14-298

SHL: 1805' FNL, 2256' FEL, SWNE, 14-T2S-R98W
BHL: 2118' FNL, 1933' FWL, SENW, 14-T2S-R98W

Federal RG 431-14-298

SHL: 1752' FNL, 2258' FEL, SWNE, 14-T2S-R98W
BHL: 1098' FNL, 1936' FEL, NWNE, 14-T2S-R98W

Federal RG 432-14-298

SHL: 1789' FNL, 2250' FEL, SWNE, 14-T2S-R98W
BHL: 2239' FNL, 1923' FEL, SWNE, 14-T2S-R98W

Federal RG 521-14-298

SHL: 1760' FNL, 2266' FEL, SWNE, 14-T2S-R98W
BHL: 1212' FNL, 1943' FWL, NENW, 14-T2S-R98W

Federal RG 522-14-298

SHL: 1812' FNL, 2255' FEL, SWNE, 14-T2S-R98W
BHL: 2431' FNL, 1928' FWL, SENW, 14-T2S-R98W

Federal RG 531-14-298

SHL: 1759' FNL, 2256' FEL, SWNE, 14-T2S-R98W
BHL: 1370' FNL, 1934' FEL, NWNE, 14-T2S-R98W

Federal RG 532-14-298

SHL: 1797' FNL, 2248' FEL, SWNE, 14-T2S-R98W
BHL: 2550' FNL, 1919' FEL, SWNE, 14-T2S-R98W

Federal RG 633-14-298

SHL: 1804' FNL, 2247' FEL, SWNE, 14-T2S-R98W
BHL: 2750' FSL, 1916' FEL, NWSE, 14-T2S-R98W

1) EXISTING ROADS

(a) From the intersection of State Highway 13 and Rio Blanco County Road 6, proceed westerly to northwesterly along CR 6 about 27 miles to the intersection with CR 24. Proceed westerly along CR 24 2.9 miles to the intersection with a dirt/gravel road, proceed left in a southerly to westerly to northeasterly direction 6.6 miles to the existing 32-14-298 pad.

(b) Please refer to the topographic maps (Sheets 7, 8 and 9) for the location of the existing well pad and access road, and for the location of other existing roads within a one mile radius of the existing well pad.

(c) All non-county roads used to access the wells will be maintained in their current condition or better than before operations began and will be maintained in accordance with current BLM Gold Book standards. Continuous inspection will be performed and preventive maintenance measures will be taken on a biannual basis. These measures may include: grading, cleaning of drainage structures, erosion control and slope stabilization, and road closures during periods of excessive soil moisture.

(d) No BLM road right-of-way is required. A BLM road ROW was requested in the APD for the RG 32-14-298 well when originally filed, this same existing upgraded ROW will be utilized.

2) NEW AND RE-CONSTRUCTED ACCESS ROADS

Approximately 1120 feet of new BLM Local Road will be constructed to provide emergency access to the back of the pad ONLY in the event that SIMOPS are utilized. Prior to construction, trees and brush will be removed and available topsoil stripped and windrowed along both sides of the road. The road will be ditched and crowned with a 24' travel surface and a maximum total disturbed width of approximately 40'. Wing ditches will be installed as needed at key locations after the road has been initially constructed and their locations can be properly determined. The maximum grade of the new road will be approximately 4%, with no major (>10') cuts or fills required (the road traverses a gentle slope, see Sheet 1). No culverts are planned.

No fence cuts or cattle guards will be needed. All new road will be constructed and maintained in accordance with current BLM Gold Book standards. Continuous inspection will be performed and preventive maintenance measures will be taken on a biannual basis. These measures may include: grading, cleaning of drainage structures, erosion control and slope stabilization, and road closures during periods of excessive soil moisture.

3) LOCATION OF EXISTING WELLS

Please reference the attached records and map from the Colorado Oil and Gas Conservation Commission for the location of all wells within a three mile radius of the existing location.

4) LOCATION OF EXISTING AND/OR PROPOSED PRODUCTION FACILITIES

(a) Primary proposed facilities are indicated on Sheet 1 and will consist of twelve 400 barrel production tanks, six for condensate and six for water, a gas allocation meter for each well on the pad, and four production units. The tanks and production units will be located on the adjacent 200' x 75' Production Pad. Tanks will be set on cut and situated so as to maintain minimum distances between the tanks and other equipment for safety purposes.

(b) Three existing lines service the pad, one 6" gas and two 4" water. The 6" gas will be either looped with a parallel line, or will be replaced with up to a 16" gas line. The trench will ultimately contain one up to 16-inch steel gas gathering line, or two 6-8" gas lines, and two 4-inch poly water lines. Please see (e) below.

(c) All permanent above-ground structures not subject to safety considerations will be painted a flat, non-reflective, earth-tone color to match the standard environmental colors.

(d) A dike will be constructed around the tanks. The dike will be constructed of compacted subsoil, be impervious, and hold 1.5 times the capacity of the largest tank.

(e) Williams, through its wholly owned subsidiary Bargath, Inc., will permit and install up to a 16" steel gas gathering line to produce the wells proposed for this pad, or will loop the existing line. The 16" line, with a proposed length of 343 feet, will connect to what will be an existing steel gas gathering line running along the west side of CR 69 (Corridor 13). An amendment to an existing BLM ROW to include these lines is submitted with these APDs and contains specific information (including the proposed pipeline map and reclamation plans) necessary for inclusion in the NEPA analysis. Please contact John Obourn or Patrick Pharo (303-734-8870) with any questions concerning the pipeline application.

5) LOCATION AND TYPE OF WATER SUPPLY

In accordance with Order 1, Williams is choosing to provide the required information in written form, rather than on a map. Water will be pumped under valid existing permits and transported by truck over privately owned and county roads from one of several sources: 1) surface water at the Mautz Ranch in SWNE19-2S-98W utilizing County Roads 86 and 24, and BLM road, 2) surface water at Mantle's Ranch in NWSW 33-2S-98W utilizing County Roads 85, 86, and 24, and BLM road, and 3) surface water at Mantle's Ranch in NWNW 33-1S-97W utilizing Highway 5, and County Road 24 and BLM road. No water supply well will be drilled on the lease.

For information purposes, be advised that the estimated fresh water volumes needed for drilling operations would be approximately 8100 bbls. Estimated water volumes needed for dust control in the event of summer time drilling would be approximately 7000 bbls. Estimated water volumes required for completion operations (including fracturing) would be approximately 35,000 bbls. Williams always endeavors to recycle produced water for all completion work, and will use same if it is available.

6) SOURCE OF CONSTRUCTION MATERIALS

(a) No off-site construction materials will be needed for well pad expansion; surface and subsurface materials at the location will suffice. Surface soil utilized will primarily be the Piceance fine sandy loam, along with Rentsac channery loam, which will be reserved for reclamation purposes. Both types have moderate soil erosion potential. Subsurface soils are clayey, unweathered bedrock is expected to be encountered about two feet from surface in some areas. Detailed soils information is available on the COGCC website.

(b) At this time, no need has been identified for off-site construction materials. If at some point it is determined that off-site construction materials are required, they will be purchased from a supplier having a permitted source of the materials, and Williams will provide to BLM the quarter quarter, Section, Township and Range location information of the source of these materials.

(c) No construction materials will be taken from Federal lands without prior approval from the appropriate Surface Management Agency.

7) METHODS FOR HANDLING WASTE DISPOSAL

(a) The vast majority of the cuttings will be contained in the lined (30 ml synthetic material) drill cuttings pit (see Sheet 1), where they will reside until being hauled offsite to an authorized disposal site, in this case, the Meeker Landfill. After removal of the drill cuttings, the liner will be removed and hauled to the Meeker Landfill. The pit will be closed. A smaller amount of the cuttings (all the fines), as well as excess cement from the well, will be contained and buried in the reserve pit. A frac water pit will be constructed and double lined with 30 ml reinforced material to accommodate frac water (see below)

(b) Drilling fluids will be contained in the reserve pit. All drilling mud will be dewatered and the useable fluids recycled as appropriate, which in turn contributes to a reduction in truck traffic on all local roads. The reserve pit has been designed to prevent the collection of surface runoff and will be constructed in the cut portion of the well pad. Two 30 ml reinforced synthetic liners will be installed and anchored in the pit berms. Two feet of freeboard will be maintained at all times. During drilling and completion operations, the reserve pit will be fenced on three sides with sheep-tight material. The fourth side of the reserve pit will be fenced immediately upon removal of the drilling rig and the fencing will be maintained until the pit is backfilled. Fluids in the reserve pit will be allowed to evaporate prior to pit burial.

(c) Produced fluids from the new wellbores, including produced water and liquid hydrocarbons produced during completions operations, will be contained in test tanks on the location. Recoverable condensate will be gauged and sold. Produced water from completion operations will be recycled or hauled off site for disposal in an authorized salt water disposal facility. The tanks will be removed from the location within 6 months. Any spills of oil, gas, produced water or any other potentially hazardous substances will be cleaned up and immediately removed to an approved disposal site. Williams has an SPCC plan on file in its Parachute office that addresses these issues. A temporary lined frac pit (also used initially for drill cuttings, see above) will be constructed and double lined with 30 ml reinforced synthetic material as indicated on Sheet 1 to contain frac water. As with the reserve pit, the pit liners will be anchored in the pit berms and two feet of freeboard will be maintained at all times. The pit will be fenced immediately upon removal of the completion rig and the fencing maintained until the pit is closed. Any excess frac water will be recycled and used at a nearby RG location for completions.

(d) Sewage will be contained in portable self-contained chemical toilets provided for human waste disposal. Upon completion of operations, or as required, the toilet holdings will be pumped and hauled by a licensed contractor for disposal in an approved sewage disposal facility.

(e) All garbage and non-flammable solid waste materials will be contained in a portable bear-proof trash cage. No trash will be placed in the reserve pits. Upon completion of operations, or as needed, the accumulated trash will be hauled off to an authorized disposal site. All debris and other waste materials not contained in the trash cage will be cleaned up and removed from the well location. No potentially adverse materials or substances will be left on the location.

(f) Used oil is put back in its original drum and stored on location in a small bermed area. Contracted recyclers come to location to remove the oil from the drums for recycling at an authorized facility.

(g) Pit closures will be conducted in accordance with applicable COGCC rules and regulations.

8) ANCILLARY FACILITIES

A small temporary living quarters unit will be located on the corner of the well pad, see Sheet 3. The unit consists of several trailers placed side by side, or sometimes stacked on top of each other. Williams will obtain a Special Use Permit from Rio Blanco County for this facility.

9) WELLSITE LAYOUT

(a) Please refer to Sheet 1 which depicts the proposed well expansion, the existing production pad, and a proposed temporary frac tank pad, the latter which would be constructed ONLY in the event SIMOPS are utilized. Pad expansion and the implementation of storm water control measures will initially disturb approximately 9.42 acres. Please reference the attached Sheet 5 and the two page description titled "Site Specific Conditions and Storm Water Management Plan" for details of proposed storm water control measures that will be implemented in accordance with requirements set forth by the State of Colorado.

(b) No construction activity will be conducted with saturated soil material or when significant watershed damage (rutting, extensive sheet soil erosion, formation of rills/gullies, etc.) is likely to occur.

(e) Vegetative material will be cleared from the expansion areas, shredded and piled to one side. Available topsoil, estimated at 8-12 inches, will be removed from the area to be disturbed, including material piles, and added to the existing stockpile of topsoil. Plans for the storage and redistribution of topsoil are presented in item (10) below and are further addressed in the attached "Site Specific Conditions and Storm Water Management Plan". Excess material piles are always kept separate from topsoil piles and their locations are depicted on Sheet 1.

(f) Soil material and overburden will not be pushed over side slopes or into drainages. All soil material disturbed will be placed in an area where it can be retrieved.

(g) The location (including the reserve pit) has been designed to prevent the collection of surface runoff.

- (h) The reserve pit is currently lined, as mentioned in item (7) above.
- (i) Cut and fill slopes on the expanded pad will be constructed no steeper than 1-1/2:1. They typically range from 3:1 to 5:1.
- (j) The maximum cut on the expanded pad will be approximately 4.7 feet. The maximum fill on the expanded pad will be approximately 11.2 feet. **Please note that excess pit spoil material will likely be used to complete the drilling pad surface, as this pad will be drilled out in one visit.**
- (k) All equipment and vehicles will be confined to the access road, pad and area specified in this APD.
- (l) At least three (3) working days prior to constructing the well pad and/or related facilities, the Operator will notify the Authorized Officer, Bureau of Land Management, White River Field Office at (970) 878-3800. The Operator will also notify the Authorized Officer within two (2) working days after the completion of earth-moving activity.

10) SURFACE RECLAMATION PLANS

- (a) The reserve pit will be allowed to dry prior to the commencement of backfilling work. The cuttings pit will be emptied as previously described in Item 7. No attempts will be made to backfill the reserve or frac pits until the pits are free of standing water. Any remaining produced water in the frac pit will be transferred via tank truck (eventually via buried water lines) to other frac pit locations in the field and recycled for completion operations. There will be a minimum of three feet of cover on each reclaimed pit. Rat and mouse holes will be filled and compacted from bottom to top immediately upon release of the drilling rig from the location.
- (b) Any hydrocarbons floating on the surface of the reserve pit will be removed as soon as possible after drilling and completion operations are finished. The pit will be continually inspected and skimmed as needed to remove the accumulations on the surface. Additionally, pits that may pose a risk to migratory birds and are expected to remain open during migration periods will be implemented with a net deterrent system. This system will help to eliminate possible interactions with waterfowl and other wildlife.
- (c) In the event of a dry hole, the well site and newly constructed access road will be restored to their approximate original contours. For the well pad, this will consist of pushing fill material into the cuts and up over the back slope. For the access road, culverts and the road crown and ditches will be removed. Topsoil will be re-distributed over all disturbed areas and seed applied as required by the BLM-WRFO.
- (d) Once all wells planned for the pad have been drilled, completed and hooked up to production equipment, interim reclamation will take place. Restoration of un-needed portions of the pad will commence as soon as practical after the installation of production facilities but no later than 6 months after said installation. Cut and fill slopes not actively used during the production phase (generally that area outside the rig anchors) will be reduced to a maximum 3:1 slope and the surface will be roughened on the contour. Salvaged topsoil from the location will be evenly redistributed over cut and fill surfaces. Upon final reclamation at the end of the project life, topsoil spread on these surfaces will be used for the overall reclamation effort. Any materials temporarily stockpiled will receive short term stabilization using a seed mix approved by the BLM and application of appropriate BMPs (including wattles, anchored straw bales, trenching, etc), see attached proposed "Site Specific Conditions and Storm Water Management Plan". Topsoil reserved along the access road will be spread over the outer ditch banks and seeded as discussed below. Anchored straw bales or wattles will be strategically placed in the

borrow ditches if evidence of erosion becomes apparent, but due to the gentle slope, the need to do so is not anticipated at this time.

(e) Once the last well on the pad is P&A'd, the well site and access road will be restored to their approximate original contours. For the well pad, this will consist of pushing fill material into the cuts and up over the back slope. For the access road, culverts and the road crown and ditches will be removed. Topsoil will be redistributed over all disturbed areas and seed applied as required by the BLM-WRFO.

(f) Reclamation operations for the well pad will begin when the fluid levels in the reserve pit have evaporated; this process is estimated to take one year. Seeding will take place during the spring and fall in accordance with seeding schedules as recommended by the BLM-WRFO.

(g) A seed mixture for use in reclamation will be supplied by the BLM-WRFO. Seed will be applied with a drill at the prescribed rate unless slopes or other impediments preclude such work. If broadcast, seed will be applied at double the prescribed drill rate.

(h) Prior to the commencement of seeding operations, areas of the pad that are heavily compacted will be ripped on the contour up to 12" deep. The entire seedbed will be prepared by disking on the contour to a depth of four to six inches.

(i) A Reclamation Status Report will be submitted to the WRFO biannually for all actions that require disturbance of surface soils on BLM-administered lands as a result of the proposed action. Actions may include, but are not limited to, well pad and road construction, construction of ancillary facilities, or power line and pipeline construction. The Reclamation Status Report will be submitted by April 15 and August 15 of each calendar year, and will include the well number, API number, legal description, UTM coordinates, project description (e.g., well pad or pipeline), reclamation status (e.g., interim or final), whether the well pad or pipeline has been re-vegetated and/or re-contoured, date seeded, photos of the reclaimed site, estimate of acres seeded and seeding method (e.g., broadcast, drilled, hydro-seeded, etc), and contact information for the person(s) responsible for developing the report. The report will be accompanied with maps showing each point (i.e., well pad), polygon, or polyline (i.e., pipeline) feature that was included in the report. Geospatial data will be submitted using the NAD 83 UTM, Zone 12 North projected coordinate system, the Transverse Mercator projection, and the GCS North American 1983 geographic coordinate system (NAD 83 datum). In addition, scanned copies of seed tags that accompanied the seed bags will be included with the report. Internal and external review of the WRFO Reclamation Status Report, and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report. The Reclamation Status Report will be submitted electronically via email and as a hard-copy to Natural Resource Specialist, Brett Smithers (brett.smithers@blm.gov). The hard copy will be submitted to:

BLM, White River Field Office
220 East Market Street
Meeker, CO 81641
Attn: Brett Smithers

(j) All seed tags will be submitted to the designated NRS within 14 calendar days from the time the seeding activities have ended via Sundry Notice. The sundry will include the purpose of the seeding activity (i.e., seeding well pad cut and fill slopes, seeding pipeline corridor, etc.). In addition, the SN will include the well or well pad number associated with the seeding activity, if applicable, the name of the contractor that performed the work, his or her phone number, the method used to apply the seed (e.g., broadcast, hydro-seeded, drilled), whether the seeding activity represents interim or final

reclamation, an estimate of the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied. The designated NRS for this project is Brett Smithers (phone: 970-878-3818; email: brett_smithers@blm.gov).

(k) The designated NRS will be notified 24 hours prior to beginning all reclamation activities associated with this project via email or by phone. The designated NRS for this project is Brett Smithers (phone: 970-878-3818; email: brett_smithers@blm.gov).

(l) The project area will be monitored for the life of the project and Williams will eradicate all noxious and invasive plant species which occur on site using materials and methods approved in advance by the Authorized Officer.

11) SURFACE OWNERSHIP

All non-county road access and the well pad are located on BLM administered lands handled by the White River Resource Area Office, 220 East Market Street, Meeker, CO 81641, phone 970-878-3800.

12) GENERAL INFORMATION

(a) A Sundry Notice will be filed for approval of all changes of plans and other operations in accordance with 43 CFR 3164.

(b) Per Onshore Order No. 1, Williams will request the surveyor electronically submit .dwg files for all survey features associated with the APDs to Natural Resource Specialist Brett Smithers at brett_smithers@blm.gov. The data will be submitted using the projection of Colorado State Plane North, NAD 83, US Survey Feet.

13) OPERATOR AND CONTACT PERSONS

Please send approved APD to:

Jennifer Head
Williams Production RMT Company
1515 Arapahoe Street, Tower III, Suite 1000
Denver, CO 80202
Phone: 303-606-4342

Please direct questions to:

Jennifer Head
Regulatory Team Lead
Highlands Asset Team - Denver
Williams Production RMT Company
Office: 303-606-4342
Cell: 970-218-3512
Jennifer.Head@Williams.com

Allan Scharf
Drilling Manager
Highlands Asset Team - Denver
Williams Production RMT Company
Office: 303-606-4280
Allan.Scharf@Williams.com

WILLIAMS PRODUCTION RMT COMPANY
Federal Lease COC66586
Federal RG 22-14-298
SHL: 1790' FNL, 2260' FEL, SWNE, 14-2S-98W
BHL: 1816' FNL, 1936' FWL, SENW, 14-2S-98W
Rio Blanco County, Colorado

DRILLING PLAN

1. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS

<i>Formation</i>	<i>Depth (MD)</i>	<i>Depth (TVD)</i>
Uinta	Surface	Surface
Green River	745'	741'
A Groove	897'	891'
B Groove	1080'	1071'
Dissolution Surface	1399'	1386'
Garden Gulch	2139'	2116'
Orange Marker	2321'	2296'
Wasatch	2524'	2496'
G Sand	4500'	4446'
Ft. Union	4783'	4726'
Mesaverde	6653'	6576'
*Approximate Top of Gas (MVRD)	7513'	7436'
*Cameo Coals	9523'	9446'
*Rollins SS	9913'	9836'
*Cozzette	10043'	9966'
*Upper Sego	10618'	10541'
*Lower Sego	10863'	10786'
Total Depth	11113'	111036'

*** Targeted Completion Intervals**

2. ESTIMATED DEPTH OF ANTICIPATED WATER, OIL, GAS OR MINERAL FORMATIONS (TVD)

<i>Formation</i>	<i>Depth (TVD)</i>	<i>Substance</i>
Uinta	Surface	water possible above 300'
Green River	741'	water, oil and gas
Wasatch	2496'	water, oil and gas
Ft. Union	4726'	water, oil and gas
Mesaverde	6576'	water, oil and gas
Cameo Coals	9446'	water, oil and gas
Rollins SS	9836'	water, oil and gas
Cozzette	9966'	water, oil and gas
Upper Sego	10541'	water, oil and gas
Lower Sego	10786'	water, oil and gas

Any usable water zones encountered will be adequately protected and reported. All usable water zones, potential hydrocarbon zones, and valuable mineral zones will be isolated.

3. PRESSURE CONTROL EQUIPMENT – Schematic Attached

A. Type: Eleven (11) Inch Double Gate Hydraulic BOP with Eleven (11) Inch Annular Preventer. The Blow-Out Preventer will be equipped as follows:

1. One (1) blind ram (above)
2. One (1) pipe ram (below)
3. Drilling spool with two (2) side outlets (choke side 3-inch minimum, kill side 2-inch minimum)
4. 3-inch diameter choke line
5. Two (2) choke line valves (3-inch minimum)
6. Kill line (2-inch minimum)
7. Two (2) adjustable chokes
8. Two (2) kill line valves, one of which will be a check valve
9. Upper and lower kelly cock valves with handles available
10. Safety valve(s) & subs to fit all drill string connections in use
11. Inside BOP or float sub available
12. Pressure gauge on choke manifold
13. Fill-up line above the uppermost preventer

B. Pressure Rating: 3,000 psi minimum

Note: A 3000# BOP system or better will be used. Schematics for a 3000# system are attached. All associated equipment will be installed in accordance with Oil and Gas Operating Order No. 2 for that pressure rating.

C. Testing Procedure:

Annular Preventer

At a minimum, the Annular Preventer will be pressure tested to 50% of the 3000# BOP working pressure for a period of ten (10) minutes or until provisions of the test are met, whichever is longer.

At a minimum, the above pressure test will be performed:

1. *When the annular preventer is initially installed;*
2. *Whenever any seal subject to test pressure is broken;*
3. *Following related repairs; and*
4. *At thirty (30) day intervals.*

In addition, the annular preventer will be functionally operated at least weekly.

Blow-Out Preventer

At a minimum, the BOP, choke manifold, and related equipment will be pressure tested to 500 psi greater than the MASP (if isolated from the surface casing by a test plug), or to 70% of the internal yield strength of the surface casing (if the BOP is not isolated from the casing by a test plug). Pressure will be maintained for a period of at least ten (10) minutes or until the requirements of the test are met, whichever is longer. At a minimum, the above pressure test will be performed:

1. *When the BOP is initially installed;*
2. *Whenever any seal subject to test pressure is broken;*
3. *Following related repairs; and*
4. *At thirty (30) day intervals.*

In addition, the pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills and tests will be recorded in the IADC driller's log.

D. Choke Manifold Equipment:

All choke lines will be straight lines unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration.

E. Accumulator:

The accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve (if so equipped), close all rams plus the annular preventer, and retain a minimum of 200 psi above precharge on the closing manifold without the use of the closing unit pumps. The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity and the fluid level of the reservoir will be maintained at the manufacturer's recommendations.

The BOP system will have two (2) independent power sources to close the preventers. Nitrogen bottles (3 minimum) will be one (1) of these independent power sources and will maintain a charge equal to the manufacturer's specifications.

The accumulator precharge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six (6) months thereafter. The accumulator pressure will be corrected if the measured precharge pressure is found to be above or below the maximum or minimum limits specified in *Onshore Oil & Gas Order Number 2*.

A manual locking device (i.e., hand wheels) or automatic locking device will be installed on all systems of 2M or greater. A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator system is inoperative.

Remote controls shall be readily accessible to the driller. Remote controls for all 3M or greater systems will be capable of closing all preventers. Remote controls for 5M or greater systems will be capable of both opening and closing all preventers. Master controls will be at the accumulator and will be capable of opening and closing all preventers and the choke line valve (if so equipped).

F. Miscellaneous Information:

The Blow-Out Preventer and related pressure control equipment will be installed, tested and maintained in compliance with the specifications in and requirements of *Onshore Oil & Gas Order Number 2*. The choke manifold and BOP extensions rods with hand wheels will be located outside the rig sub-structure. The hydraulic BOP closing unit will be located at least twenty-five (25) feet from the well head but readily accessible to the driller. Exact locations and configurations of the hydraulic BOP closing unit will depend upon the particular rig contracted to drill this hole.

A flare system will be in place during production hole drilling operations. The flare system will be agreed upon with the local BLM inspector in the field. The flare system shall be anchored and require a flare pit. Depending on the surface location, the normal length of the flare line will be 100' from well center. It will have straight lines unless turns are targeted with running tees. Noncombustible gas is not likely or expected.

4. CASING AND CEMENTING PROGRAM

A. Casing Program: All New

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Depth Set (MD)	Depth Set (TVD)
26"	18"	1/4" Wall		Welded	0-80'	0-80'
14.75" – 13.5"	9.625"	36.0#	J-55	ST&C	0-3024'	0-2990'
8.75" – 7.875"	4.500"	11.6#	P-110	LT&C	0-11113'	0-11036'

Surface Casing:

Surface casing will be set 500' to 750' into the Wasatch, depending on problems encountered.

A float collar and float shoe will be used. The float collar will be located one joint up from the float shoe.

The surface casing will have one centralizer per joint on the bottom three joints; one above and one below the stage tool. In addition, one centralizer will be placed every third joint from the stage tool to above the "A" groove for a total of approximately 11 centralizers.

To aid in surface string cementation, a two stage cement program with stage tool set at approximately **1300'** will be utilized. Three cement baskets, one located 150' above the cement stage tool and two located 150' and 300' below the stage tool, will be used.

Casing string(s) will be pressure tested to 0.22 psi/foot of casing string length or 1500 psi, whichever is greater (not to exceed 70% of the internal yield strength of the casing), after cementing and prior to drilling out from under the casing shoe.

Production Casing:

A float collar and float shoe will be used. The float collar will be located one joint up from the casing shoe.

The production casing will have approximately 25 centralizers; one on each of the bottom two joints, and one every third joint from the bottom of casing through 200' above top of gas.

B. Cementing Program: (Also see attached Schlumberger Ryan Gulch Cement procedure)

Surface Casing

(Based on 14.75" gauge hole)

Cement with approximately **1212 sxs** 50/50 Poz A cement + additives at **12.8 ppg** (yield= **1.70** ft³/sx for 1st Stage Lead, 1st Stage Tail, and 2nd Stage Tail). Circulated to surface; top out as necessary.

Surface Cementing General Procedure

Primary Cementation:

1. Rig up cement head and lines. Pump 5 bbl fresh water and pressure test head and lines. Pump additional 5 bbl fresh water.
2. Mix and pump first stage cement.
3. Drop top plug and displace to casing shoe. Bump plug.
4. Drop stage tool opening plug and shift stage tool open.
5. Circulate out excess cement from first stage cement.
6. Mix and pump second stage cement.
7. Drop closing plug and displace to stage tool. Shift stage tool closed.

Note: If cement is not indicated at surface, prepare to run a CBL log to determine top of cement. If required by BLM field inspector. Do not run CBL log until cement has set at least 12 hours or as indicated by surface cement samples.

Remedial Cementation:

If cement is circulated to surface, pick up 2" trimming line and run in hole and tag cement. Mix and pump 14.5 ppg Class A (Type I/II) cement + 2% Calcium Chloride to surface.

If cement was not circulated to surface, pick up 2" trimming line and run in hole and tag cement. If required by BLM field inspector. Verify with bond log that trimming line is at top of cement. Mix and pump 14.5 ppg Class A (Type I/II) cement + 2% Calcium Chloride to surface.

If trimming line is unable to reach top of cement as indicated by the bond log, notify the BLM for further discussions concerning perforations and circulating cement to surface or other options based on formulations and depths.

All waiting on cement (WOC) times will be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out. The BOP will not be nipped up until the lead or remedial cement reaches a minimum compressive strength of 100 psi. See attached Halliburton Cement Test/Additive report.

Production Casing

(Based on 8.75" gauge hole)

(200' above top of Mesaverde)

Lead with approximately **145 sxs** 35/65 Poz/G cement + additives mixed at **12.7 ppg** (yield = **1.82** ft³/sx).

Tail with approximately **399 sxs** Rockies CORRECT cement + additives mixed at **13.5 ppg** (yield= **2.17** ft³/sx). The top of cement at surface casing shoe will be determined by log and sample evaluation.

Production Cementing General Procedure

Primary Cementation:

1. Rig up cement head and lines. Pump 5 bbl fresh water and pressure test head and lines. Pump additional 95 bbl fresh water.
2. Mix and pump first lead cement.
3. Mix and pump second lead cement.
4. Mix and pump tail cement.
5. Drop top plug and displace to casing shoe with treated water.
6. Bump plug with 1000 psi over circulating pressure.

The above cement volumes are approximate and were calculated under the assumption that a gauge hole will be achieved. Actual cement volumes may vary due to variations in the actual hole gauge and will be determined by running a caliper log on the drilled hole.

See attached Halliburton Cement/Test Additive report for cement strengths and additives.

5. MUD PROGRAM – Visual Monitoring

<i>Interval</i>	<i>Mud Type</i>	<i>Weight</i>	<i>Viscosity</i>	<i>Fluid Loss</i>
0 – 3024'	Fresh Water	Fresh Water	45 – 50	No Control
3024' – 11113'	Fresh Water/Gel	8.0 – 9.5	40 – 50	8 – 10 ml

Sufficient mud material(s) to maintain mud properties, control lost circulation and maintain well control will be available at the well during drilling operations.

6. EVALUATION PROGRAM

Logs DIL-GR-SP & BHC Sonic from TD to surface casing
Neutron Density from TD to base surface casing
GR to surface (or cased hole equivalent if unable to get open hole logs or previous open hole logs on drill pad).

DST's DST's will be run as warranted by logs and/or shows – none are anticipated at this time.

Cores No cores are anticipated.

The evaluation program may change at the discretion of the well site geologist, with prior approval from the Authorized Officer, Bureau of Land Management.

Stimulation No stimulation or frac treatment has been formulated for this test at this time. The drill site, as approved, will be of sufficient size to accommodate all completion activities.

7. ABNORMAL CONDITIONS

No abnormal temperatures or pressures are anticipated. No H₂S has been encountered in or known to exist from previous wells drilled to similar depths in the general area.

Maximum anticipated bottom hole pressure equals approximately **4966 psi** and maximum anticipated surface pressure equals approximately **2538 psi*** (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

*maximum surface pressure = Max BHP – (0.22 x TD)

8. ANTICIPATED STARTING DATES AND NOTIFICATION OF OPERATIONS

A. Anticipated Starting Dates:

<i>Anticipated Commencement Date:</i>	October 1, 2010
<i>Drilling Days:</i>	Approximately 25 Days
<i>Completion Days:</i>	Approximately 14 Days

B. Notification of Operations:

White River Field Office, Bureau of Land Management
Address 220 East Market Street, Meeker, CO 81641
Phone (970) 878-3800

The BLM will be notified 24 hours prior to spudding, cementing casing strings and commencing BOP tests.

If the hole is deemed to be considered dry, then arrangements will be made for immediate plugging. The BLM will be notified and approval obtained prior to beginning plugging operations.