Rec'd 05/21/2020 - NMOCD

Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM137445

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
CHES RIDDLE FED COM
202H

2. Name of Operator
MATADOR PRODUCTION COMPANY

9. API Well No.
30 015 47107

3a. Address
5400 LBJ Freeway, Suite 1500 Dallas TX 75240

3b. Phone No. *(include area code)*
(972)371-5200

10. Field and Pool, or Exploratory
JENNINGS; BONE SPRING, WEST / ANT

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

At surface SENE / 1863 FNL / 568 FEL / LAT 32.2491547 / LONG -104.0513456

At proposed prod. zone SENE / 990 FSL / 240 FEL / LAT 32.249591 / LONG -104.0326212

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 2 / T24S / R28E / NMP

14. Distance in miles and direction from nearest town or post office*
2 miles

12. County or Parish
EDDY

13. State
NM

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

16. No of acres in lease
80

17. Spacing Unit dedicated to this well
320

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

19. Proposed Depth
9701 feet / 14750 feet

20. BLM/BIA Bond No. in file
FED: NMB001079

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
2979 feet

22. Approximate date work will start*
12/31/2018

23. Estimated duration
30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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 requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Lara Thompson / Ph: (505)431-2678	09/24/2018

Title
Project Manager

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Christopher Walls / Ph: (575)234-2234	05/19/2020

Title	Office
Petroleum Engineer	CARLSBAD

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.

APPROVED WITH CONDITIONS
Approval Date: 05/19/2020

(Continued on page 2)

*(Instructions on page 2)

Entered 05/21/2020 - KMS NMOCD

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

FORM C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ **AMENDED REPORT**

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
3001547107		

[4] Property Code	[5] Property Name	[6] Well Number
328110	CHES RIDDLE FED COM	#202H

[7] OGRID No.	[8] Operator Name	[9] Elevation
228937	MATADOR PRODUCTION COMPANY	2979'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	02	24-S	28-E	–	1863'	NORTH	568'	EAST	EDDY

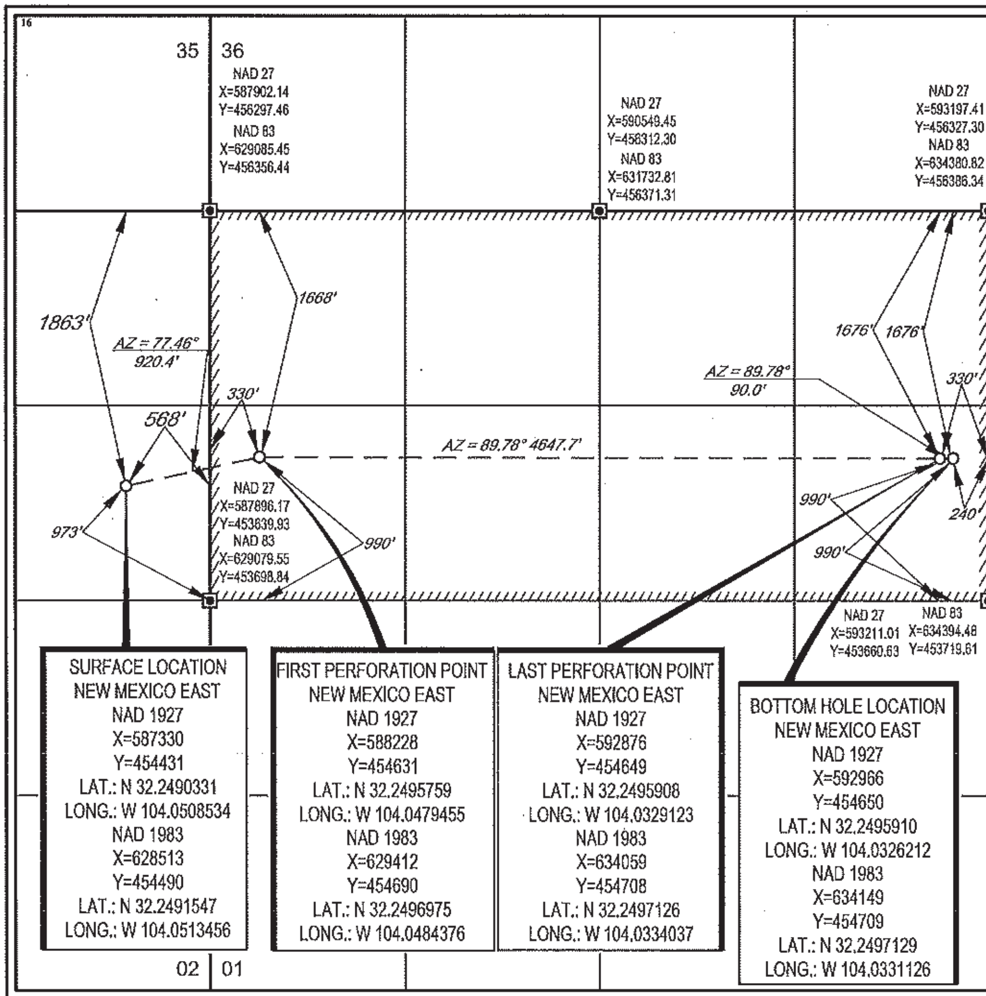
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	01	24-S	28-E	–	1676'	NORTH	240'	EAST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
319.36			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16]



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Lara Thompson 8/22/18
Signature Date

Lara Thompson
Printed Name

lara.thompson@swca.com
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true to the best of my belief.

06/18/2018
Date of Survey
Signature and Seal of Professional Surveyor

M. CHAD BROWN
NEW MEXICO
18329
PROFESSIONAL SURVEYOR

Certificate Number

S:\SURVEY\MATADOR_RESOURCES\CHES_RIDDLE_FED_COM_01-24S-28E\FINAL_PRODUCTS\LO_CHES_RIDDLE_FED_COM_202H_REV2.DWG 7/18/2018 2:52:26 PM bgregory

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FORM C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ **AMENDED REPORT**

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name	
	2220	Antelope Ridge	
4 Property Code	**5 Property Name**		**6 Well Number**
	CHES RIDDLE FED COM		#202H
7 OGRID No.	**8 Operator Name**		**9 Elevation**
	MATADOR PRODUCTION COMPANY		2979'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	02	24-S	28-E	–	1863'	NORTH	568'	EAST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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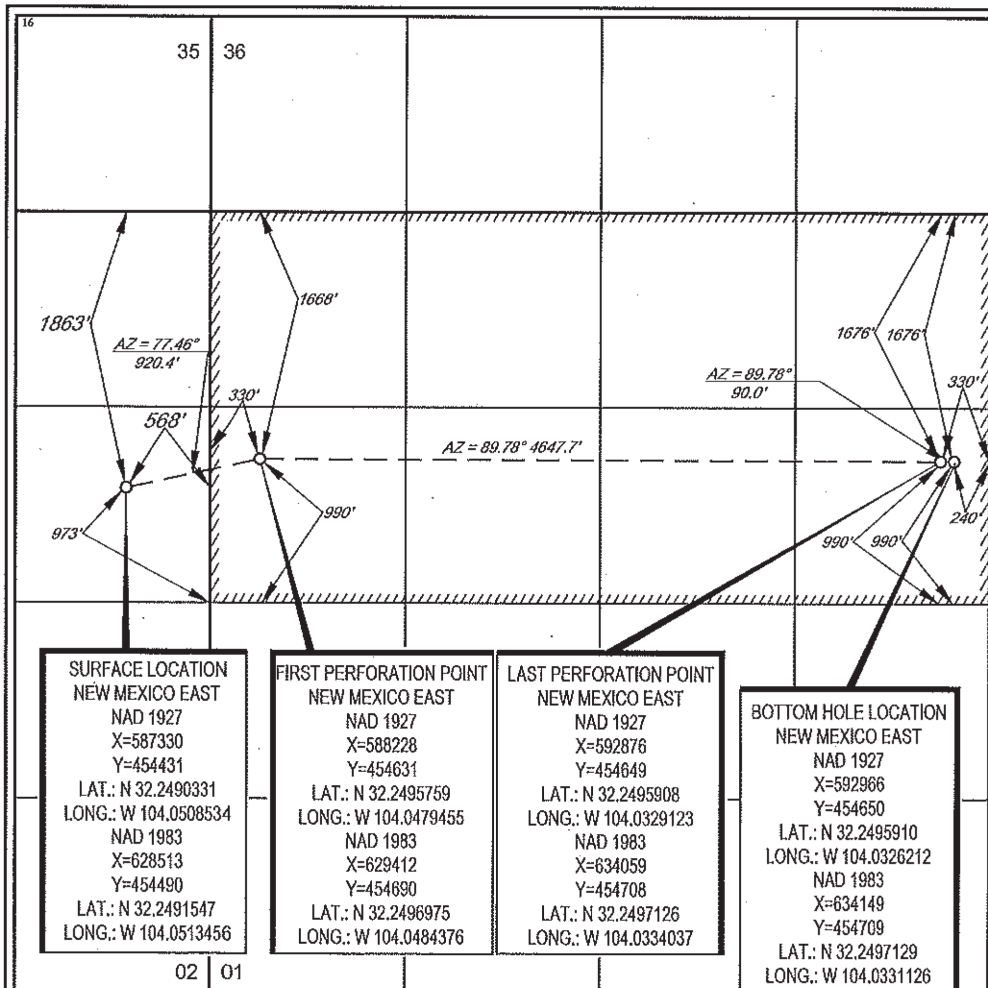
12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
319.36			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

16



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Lara Thompson 8/22/18
Signature Date

Lara Thompson
Printed Name

lara.thompson@swca.com
E-mail Address

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true to the best of my belief.

06/18/2018
Date of Survey
Signature and Seal of Professional Surveyor

MICHAEL BROWN NEW MEXICO 18329 PROFESSIONAL SURVEYOR

Certificate Number

S:\SURVEY\MATADOR_RESOURCES\CHES_RIDDLE_FED_COM_01-24S-28E\FINAL_PRODUCTS\LO_CHES_RIDDLE_FED_COM_202H_REV2.DWG 7/18/2018 2:52:25 PM bgregory

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Matador Production Company
WELL NAME & NO.:	Ches Riddle Fed Com 202H
SURFACE HOLE FOOTAGE:	1863'/N & 568'/E
BOTTOM HOLE FOOTAGE	990'/S & 240'/E
LOCATION:	Section 2, T.24 S., R.28 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	○ Multibowl	◉ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **448** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **<u>8 hours</u>** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **13-3/8** inch intermediate casing shall be set at approximately **2739** feet. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

<u>Option 1 (Single Stage):</u>

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

<u>Option 2:</u>

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

❖ In **<u>Medium Cave/Karst Areas</u>** if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **7 5/8 x 7** inch 2^{nd} intermediate casing is:

<u>Option 1 (Single Stage):</u>

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

4. The minimum required fill of cement behind the **5-1/2 x 4-1/2** inch production casing is:

   - Cement should tie-back **200 feet** into the previous casing. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2.

Option 1:

a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

a. Wellhead shall be installed by manufacturer’s representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer’s representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

<u>**Communitization Agreement**</u>

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. <u>When the Communitization Agreement number is known, it shall also be on the sign.</u>

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

    a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
    b. When the operator proposes to set surface casing with Spudder Rig
        - Notify the BLM when moving in and removing the Spudder Rig.
        - Notify the BLM when moving in the 2^{nd} Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
        - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

NMK04022020

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Lara Thompson **Signed on:** 08/28/2018

Title: Project Manager

Street Address: 5647 Jefferson Street NE

City: Albuquerque **State:** NM **Zip:** 87109

Phone: (505)431-2678

Email address: Lara.Thompson@swca.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

APD ID: 10400033341 **Submission Date:** 09/24/2018

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHES RIDDLE FED COM **Well Number:** 202H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400033341 **Tie to previous NOS?** N **Submission Date:** 09/24/2018

BLM Office: CARLSBAD **User:** Lara Thompson **Title:** Project Manager

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM137445 **Lease Acres:** 80

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? YES **APD Operator:** MATADOR PRODUCTION COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: MATADOR PRODUCTION COMPANY

Operator Address: 5400 LBJ Freeway, Suite 1500 **Zip:** 75240

Operator PO Box:

Operator City: Dallas **State:** TX

Operator Phone: (972)371-5200

Operator Internet Address: amonroe@matadorresources.com

Section 2 - Well Information

Well in Master Development Plan? NO **Master Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: CHES RIDDLE FED COM **Well Number:** 202H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** JENNINGS; BONE SPRING, WEST **Pool Name:** ANTELOPE RIDGE; BS, NORTH

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHES RIDDLE FED COM **Well Number:** 202H

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** SLOT 2 **Number:** 5

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: APPRAISAL

Describe sub-type:

Distance to town: 2 Miles **Distance to nearest well:** 30 FT **Distance to lease line:** 568 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: ChesRiddleFedCom_202H_20180924120550.pdf

Well work start Date: 12/31/2018 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: **Reference Datum:**

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	1863	FNL	568	FEL	24S	28E	2	Aliquot SENE	32.2491547	-104.0513456	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	2979	0	0	
KOP Leg #1	1863	FNL	568	FEL	24S	28E	2	Aliquot SENE	32.2491547	-104.0513456	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-6143	9145	9122	
PPP Leg #1-1	1680	FNL	2640	FEL	24S	28E	1	Aliquot SENW	32.1458937	-104.227312	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 137445	-6722	12432	9701	

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHES RIDDLE FED COM **Well Number:** 202H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-2	1680	FNL	1320	FWL	24S	28E	1	Aliquot SENW	32.1458921	-104.242768	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 137445	-6722	11112	9701	
PPP Leg #1-3	990	FSL	330	FWL	24S	28E	1	Aliquot SWNW	32.2496975	-104.0484376	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-6722	10112	9701	
EXIT Leg #1	990	FSL	330	FEL	24S	28E	1	Aliquot SENE	32.2495908	-104.0329123	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-6722	14660	9701	
BHL Leg #1	990	FSL	240	FEL	24S	28E	1	Aliquot SENE	32.249591	-104.0326212	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-6722	14750	9701	

APD ID: 10400033341

Submission Date: 09/24/2018

Highlighted data reflects the most recent changes

Show Final Text

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHES RIDDLE FED COM

Well Number: 202H

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
292053	TOP SALT	2506	473	473		NONE	N
292054	CASTILE	1500	1006	1006		NONE	N
292055	BASE OF SALT	-140	2646	2646		NONE	N
292057	BELL CANYON	-183	2689	2689		NATURAL GAS, OIL	N
292058	CHERRY CANYON	-1041	3547	3547		NATURAL GAS, OIL	N
292059	BRUSHY CANYON	-2224	4730	4730		NATURAL GAS, OIL	N
292060	BONE SPRING LIME	-3822	6328	6328		NATURAL GAS, OIL	N
292061	BONE SPRING 1ST	-4560	7066	7066		NATURAL GAS, OIL	N
292062	BONE SPRING 2ND	-5030	7536	7536		NATURAL GAS, OIL	N
292063	BONE SPRING 3RD	-5989	8495	8495		NATURAL GAS, OIL	N
292064	WOLFCAMP	-7072	9578	9672		NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 12000

Equipment: A 12,000' 5000-psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and one annular preventer will be utilized below surface casing to TD. See attachments for BOP and choke manifold diagrams. An accumulator complying with Onshore Order #2 requirements for the pressure rating of the BOP stack will be present. A rotating head will also be installed as needed.

Requesting Variance? YES

Variance request: Matador requests a variance to have the option of running a speed head for setting the Intermediate 1, Intermediate 2, and Production Strings. Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. If the specific hose is not available, then one of equal or higher rating will be used. Matador requests a variance to have the option of batch drilling this well with other wells on the same pad. In the event that this well is batch drilled, the wellbore will be secured with a blind flange of like pressure. When the rig returns to this well and BOPs are installed, the operator will perform a full BOP test. Matador requests a variance to run 7-5/8” BTC casing inside 9-5/8” BTC casing which will be less than the 0.422” stand off regulation. Matador has met with Christopher Walls and Mustafa Haque as well as other BLM representatives and determined that this would be acceptable as long as the 7-5/8” flush casing was run throughout the entire 300’ cement tie back section between 9-5/8” and 7-5/8” casing."

Testing Procedure: BOP will be inspected and operated as required in Onshore Order #2. Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. A third party company will test the BOPs. After setting surface casing, a minimum 5M BOPE system will be installed. Test pressures will be 250 psi low and 5000 psi high with the annular being tested to 250 psi low and 2500 psi high before drilling below surface shoe. In the event that the rig drills multiple wells on the pad and any seal subject to test pressures are broken, a full BOP test will be performed when the rig returns and the 5M BOPE system is re-installed.

Choke Diagram Attachment:

5M_System_Choke_Manifold_Diagram_20180827124014.pdf

BOP Diagram Attachment:

BOP_809_001_20180827123904.pdf

809_CoFlex_Certs__20180924140021.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	498	0	498			498	J-55	54.5	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
2	INTERMEDIATE	8.75	7.625	NEW	API	Y	0	2439	0	2439			2439	P-110	29.7	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	2739	0	2739			2739	J-55	40	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
4	PRODUCTION	6.125	5.5	NEW	NON API	Y	0	8945	0	8945			8945	P-110	20	OTHER - DWC/C-IS MS	1.125	1.125	BUOY	1.8	BUOY	1.8
5	INTERMEDIATE	8.75	7.625	NEW	NON API	Y	2439	9045	2439	9045			6606	P-110	29.7	OTHER - VAM HTF-NR	1.125	1.125	BUOY	1.8	BUOY	1.8
6	INTERMEDIATE	8.75	7.0	NEW	API	Y	9045	9945	9045	9686			900	P-110	29	BUTT	1.125	1.125	BUOY	1.8	BUOY	1.8
7	PRODUCTION	6.125	4.5	NEW	NON API	Y	8945	14750	8945	9701			5805	P-110	13.5	OTHER - DWC/C-IS HT	1.125	1.125	BUOY	1.8	BUOY	1.8

Casing Attachments

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHES RIDDLE FED COM **Well Number:** 202H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20190709104735.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Tapered_String_Spec_Ches_Riddle_Fed_Com__202H_20190709104313.pdf

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20190709104723.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20190709104713.pdf

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

5.500in_x_20__VST_P110EC_DWC_C_IS_MS_CDS_20190709103946.PDF

Tapered String Spec:

Tapered_String_Spec_Ches_Riddle_Fed_Com__202H_20180827125118.pdf

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20180827125158.pdf

Casing ID: 5 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

VRCC_16_1177___CDS___7.625_in_29.70_ppf_P110_EC_VAM_HTF_NR_Rev02_20190709104436.pdf

Tapered String Spec:

Tapered_String_Spec_Ches_Riddle_Fed_Com__202H_20190709104445.pdf

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20190709104656.pdf

Casing ID: 6 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Tapered_String_Spec_Ches_Riddle_Fed_Com__202H_20190709104549.pdf

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20190709104644.pdf

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHES RIDDLE FED COM **Well Number:** 202H

Casing Attachments

Casing ID: 7 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

4.500in_x_13.50___0.290in__VST_P110EC_DWC_C_HT_IS_Tubing_CDS_20190709104104.PDF

Tapered String Spec:

Tapered_String_Spec_Ches_Riddle_Fed_Com__202H_20190709104117.pdf

Casing Design Assumptions and Worksheet(s):

BLM_Casing_Design_Assumptions_4_string_20190709104140.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	198	220	1.72	12.5	371	100	C	5% NaCl + LCM
SURFACE	Tail		198	498	330	1.38	14.8	452	100	C	5% NaCl + LCM
INTERMEDIATE	Lead		0	2191	500	2.13	12.6	1066	50	H	Bentonite + 1% CaCL2 + 8% NaCl + LCM
INTERMEDIATE	Tail		2191	2739	210	1.38	14.8	291	50	H	5% NaCl + LCM
INTERMEDIATE	Lead		2439	8945	410	2.13	11	883		TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		8945	9945	170	1.38	14.8	233		TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		2439	8945	410	2.13	11	883	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		8945	9945	170	1.38	14.8	233	35	TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Lead		2439	8945	410	2.13	11	883		TXI	Fluid Loss + Dispersant + Retarder + LCM
INTERMEDIATE	Tail		8945	9945	170	1.38	14.8	233		TXI	Fluid Loss + Dispersant + Retarder + LCM
PRODUCTION	Lead		9445	14750	480	1.17	15.8	558	10	H	Fluid Loss + Dispersant + Retarder + LCM

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		9445	14750	480	1.17	15.8	558		TXI	Fluid Loss + Dispersant + Retarder + LCM

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions.

Describe the mud monitoring system utilized: An electronic Pason mud monitoring system complying with Onshore Order 2 will be used.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	498	SPUD MUD	8.4	8.8							
498	2739	SALT SATURATED	9.5	10.2							
2739	9686	OTHER : FW/Cut Brine	8.4	9.4							
9686	9701	OIL-BASED MUD	11.5	12.5							

Operator Name: MATADOR PRODUCTION COMPANY

Well Name: CHES RIDDLE FED COM **Well Number:** 202H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

A 2-person mud logging program will be used from Intermediate 2 Casing shoe to TD.
No electric logs are planned at this time. GR will be collected through the MWD tools from Intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to top of curve. "

List of open and cased hole logs run in the well:

CBL,GR,MUDLOG

Coring operation description for the well:

No core or drill stem test is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6306 **Anticipated Surface Pressure:** 4171.78

Anticipated Bottom Hole Temperature(F): 155

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? NO

Hydrogen sulfide drilling operations plan:

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Matador_Ches_Riddle_Fed_Com_202H_Rev_A.0_HSE_Risk_Clearance_20180827130609.pdf
Matador_Ches_Riddle_Fed_Com_202H_Rev_A.0_Plot_20180827130611.pdf
Matador_Ches_Riddle_Fed_Com_202H_Rev_A.0_Wellpath_20180827130612.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

Drill_Plan_Ches_Riddle_Fed_Com__202H_20180827130453.pdf
4_String_Wellhead_Diagram_20180827131109.pdf
Close_Loop_System_20180827131131.docx
H2S_Emergency_Contacts_20190709111214.docx
Matador_Hydrogen_Sulfide_Drilling_Original_20190709111214.docx

MRC_Energy_Co__Drilling_Contingency_plan_20190709111215.doc

Gas_Capture_Plan___Ches_Riddle_Federal_Com__112H__122H__202H__222H__206H..._20190709111228.pdf

Tapered String Specification Sheet

Ches Riddle Fed Com #202H
SHL: 1863' FNL & 568' FEL Section 2
BHL: 1676' FNL & 240' FEL Section 1
Township/Range: 24S 28E
Elevation Above Sea Level: 2,979'

String	Hole Size (in)	Set MD (ft)	Set TVD (ft)	Casing Size (in)	Wt. (lb/ft)	Grade	Joint	Collapse	Burst	Tension
Surface	17.5	0 - 498	0 - 498	13.375	54.5	J-55	BUTT	1.125	1.125	1.8
Intermediate 1	12.25	0 - 2739	0 - 2739	9.625	40	J-55	BUTT	1.125	1.125	1.8
Intermediate 2 Top	8.75	0 - 2439	0 - 2439	7.625	29.7	P-110	BUTT	1.125	1.125	1.8
Intermediate 2 Middle	8.75	2439 - 9045	2439 - 9045	7.625	29.7	P-110	VAM HTF-NR	1.125	1.125	1.8
Intermediate 2 Bottom	8.75	9045 - 9945	9045 - 9686	7	29	P-110	BUTT	1.125	1.125	1.8
Production Top	6.125	0 - 8945	0 - 8945	5.5	20	P-110	DWC/C-IS MS	1.125	1.125	1.8
Production Bottom	6.125	8945 - 14750	8945 - 9701	4.5	13.5	P-110	DWC/C-IS HT	1.125	1.125	1.8

Tapered String Specification Sheet

Ches Riddle Fed Com #202H
SHL: 1863' FNL & 568' FEL Section 2
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Surface	17.5	0 - 498	0 - 498	13.375	54.5	J-55	BUTT	1.125	1.125	1.8
Intermediate 1	12.25	0 - 2739	0 - 2739	9.625	40	J-55	BUTT	1.125	1.125	1.8
Intermediate 2 Top	8.75	0 - 2439	0 - 2439	7.625	29.7	P-110	BUTT	1.125	1.125	1.8
Intermediate 2 Middle	8.75	2439 - 9045	2439 - 9045	7.625	29.7	P-110	VAM HTF-NR	1.125	1.125	1.8
Intermediate 2 Bottom	8.75	9045 - 9945	9045 - 9686	7	29	P-110	BUTT	1.125	1.125	1.8
Production Top	6.125	0 - 8945	0 - 8945	5.5	20	P-110	DWC/C-IS MS	1.125	1.125	1.8
Production Bottom	6.125	8945 - 14750	8945 - 9701	4.5	13.5	P-110	DWC/C-IS HT	1.125	1.125	1.8

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Surface	17.5	0 - 498	0 - 498	13.375	54.5	J-55	BUTT	1.125	1.125	1.8
Intermediate 1	12.25	0 - 2739	0 - 2739	9.625	40	J-55	BUTT	1.125	1.125	1.8
Intermediate 2 Top	8.75	0 - 2439	0 - 2439	7.625	29.7	P-110	BUTT	1.125	1.125	1.8
Intermediate 2 Middle	8.75	2439 - 9045	2439 - 9045	7.625	29.7	P-110	VAM HTF-NR	1.125	1.125	1.8
Intermediate 2 Bottom	8.75	9045 - 9945	9045 - 9686	7	29	P-110	BUTT	1.125	1.125	1.8
Production Top	6.125	0 - 8945	0 - 8945	5.5	20	P-110	DWC/C-IS MS	1.125	1.125	1.8
Production Bottom	6.125	8945 - 14750	8945 - 9701	4.5	13.5	P-110	DWC/C-IS HT	1.125	1.125	1.8

Tapered String Specification Sheet

Ches Riddle Fed Com #202H
SHL: 1863' FNL & 568' FEL Section 2
BHL: 1676' FNL & 240' FEL Section 1
Township/Range: 24S 28E
Elevation Above Sea Level: 2,979'

String	Hole Size (in)	Set MD (ft)	Set TVD (ft)	Casing Size (in)	Wt. (lb/ft)	Grade	Joint	Collapse	Burst	Tension
Surface	17.5	0 - 498	0 - 498	13.375	54.5	J-55	BUTT	1.125	1.125	1.8
Intermediate 1	12.25	0 - 2739	0 - 2739	9.625	40	J-55	BUTT	1.125	1.125	1.8
Intermediate 2 Top	8.75	0 - 2439	0 - 2439	7.625	29.7	P-110	BUTT	1.125	1.125	1.8
Intermediate 2 Middle	8.75	2439 - 9045	2439 - 9045	7.625	29.7	P-110	VAM HTF-NR	1.125	1.125	1.8
Intermediate 2 Bottom	8.75	9045 - 9945	9045 - 9686	7	29	P-110	BUTT	1.125	1.125	1.8
Production Top	6.125	0 - 8945	0 - 8945	5.5	20	P-110	DWC/C-IS MS	1.125	1.125	1.8
Production Bottom	6.125	8945 - 14750	8945 - 9701	4.5	13.5	P-110	DWC/C-IS HT	1.125	1.125	1.8

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Intermediate 1	12.25	0 - 2739	0 - 2739	9.625	40	J-55	BUTT	1.125	1.125	1.8
Intermediate 2 Top	8.75	0 - 2439	0 - 2439	7.625	29.7	P-110	BUTT	1.125	1.125	1.8
Intermediate 2 Middle	8.75	2439 - 9045	2439 - 9045	7.625	29.7	P-110	VAM HTF-NR	1.125	1.125	1.8
Intermediate 2 Bottom	8.75	9045 - 9945	9045 - 9686	7	29	P-110	BUTT	1.125	1.125	1.8
Production Top	6.125	0 - 8945	0 - 8945	5.5	20	P-110	DWC/C-IS MS	1.125	1.125	1.8
Production Bottom	6.125	8945 - 14750	8945 - 9701	4.5	13.5	P-110	DWC/C-IS HT	1.125	1.125	1.8

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Planned Wellpath Report

Ches Riddle Fed Com No. 202H Rev A.0

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

REPORT SETUP INFORMATION			
Projection System	**NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet**	Software System	**WellArchitect® 5.1**
North Reference	**Grid**	User	**Buiduyh**
Scale	**0.999918**	Report Generated	**07/Aug/2018** at **16:02**
Convergence at slot	**0.15° East**	Database/Source file	**WellArchitectDB/Ches_Riddle_Fed_Com_No._202H_Rev_A.0.xml**

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	42.00	-42.00	**587330.00**	**454431.00**	32°14'56.515"N	104°03'03.071"W
Facility Reference Pt			**587372.00**	**454389.00**	32°14'56.099"N	104°03'02.584"W
Field Reference Pt			**152400.30**	**0.00**	30°59'42.846"N	105°26'33.659"W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on Ches Riddle Fed Com No. 202H (KB) to Facility Vertical Datum	**3008.00ft**
Horizontal Reference Pt	**Slot**	Rig on Ches Riddle Fed Com No. 202H (KB) to Mean Sea Level	**3008.00ft**
Vertical Reference Pt	**Rig on Ches Riddle Fed Com No. 202H (KB)**	Rig on Ches Riddle Fed Com No. 202H (KB) to Ground Level at Slot (Ches Riddle Fed Com No. 202H)	**29.00ft**
MD Reference Pt	**Rig on Ches Riddle Fed Com No. 202H (KB)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**89.77°**

Planned Wellpath Report

Ches Riddle Fed Com No. 202H Rev A.0

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

WELLPATH DATA (175 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	61.128	0.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
29.00	0.000	61.128	29.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	Tie On
129.00†	0.000	61.128	129.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
229.00†	0.000	61.128	229.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
329.00†	0.000	61.128	329.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
429.00†	0.000	61.128	429.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
529.00†	0.000	61.128	529.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
629.00†	0.000	61.128	629.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
729.00†	0.000	61.128	729.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
829.00†	0.000	61.128	829.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
929.00†	0.000	61.128	929.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1006.00†	0.000	61.128	1006.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	Top of Salt Z (Castile)
1029.00†	0.000	61.128	1029.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1129.00†	0.000	61.128	1129.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1229.00†	0.000	61.128	1229.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1329.00†	0.000	61.128	1329.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1429.00†	0.000	61.128	1429.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1529.00†	0.000	61.128	1529.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1629.00†	0.000	61.128	1629.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1729.00†	0.000	61.128	1729.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1829.00†	0.000	61.128	1829.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
1929.00†	0.000	61.128	1929.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
2029.00†	0.000	61.128	2029.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
2129.00†	0.000	61.128	2129.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
2229.00†	0.000	61.128	2229.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	
2250.00	0.000	61.128	2250.00	0.00	0.00	0.00	587330.00	454431.00	32°14'56.515"N	104°03'03.071"W	0.00	End of Tangent
2329.00†	0.790	61.128	2329.00	0.48	0.26	0.48	587330.48	454431.26	32°14'56.518"N	104°03'03.066"W	1.00	
2429.00†	1.790	61.128	2428.97	2.45	1.35	2.45	587332.45	454432.35	32°14'56.529"N	104°03'03.043"W	1.00	
2529.00†	2.790	61.128	2528.89	5.96	3.28	5.95	587335.95	454434.28	32°14'56.548"N	104°03'03.002"W	1.00	
2629.00†	3.790	61.128	2628.72	11.00	6.05	10.97	587340.97	454437.05	32°14'56.575"N	104°03'02.944"W	1.00	

Planned Wellpath Report

Ches Riddle Fed Com No. 202H Rev A.0

REFERENCE WELLPATH IDENTIFICATION

Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

WELLPATH DATA (175 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2646.32†	3.963	61.128	2646.00	12.02	6.62	12.00	587342.00	454437.62	32°14'56.580"N	104°03'02.932"W	1.00	Base of Salt Z (G30:CS14-CSB)
2689.43†	4.394	61.128	2689.00	14.78	8.13	14.75	587344.75	454439.13	32°14'56.595"N	104°03'02.899"W	1.00	Z (G26: Bell Cyn.)
2729.00†	4.790	61.128	2728.44	17.56	9.66	17.52	587347.52	454440.66	32°14'56.610"N	104°03'02.867"W	1.00	
2829.00†	5.790	61.128	2828.02	25.65	14.11	25.60	587355.59	454445.11	32°14'56.654"N	104°03'02.773"W	1.00	
2929.00†	6.790	61.128	2927.41	35.27	19.40	35.19	587365.19	454450.40	32°14'56.706"N	104°03'02.661"W	1.00	
2950.00	7.000	61.128	2948.26	37.48	20.62	37.40	587367.40	454451.62	32°14'56.718"N	104°03'02.635"W	1.00	End of Build
3029.00†	7.000	61.128	3026.67	45.93	25.27	45.83	587375.83	454456.27	32°14'56.764"N	104°03'02.537"W	0.00	
3129.00†	7.000	61.128	3125.93	56.63	31.15	56.50	587386.50	454462.15	32°14'56.822"N	104°03'02.413"W	0.00	
3229.00†	7.000	61.128	3225.18	67.32	37.04	67.17	587397.17	454468.04	32°14'56.880"N	104°03'02.288"W	0.00	
3329.00†	7.000	61.128	3324.43	78.02	42.92	77.85	587407.84	454473.92	32°14'56.938"N	104°03'02.164"W	0.00	
3429.00†	7.000	61.128	3423.69	88.71	48.81	88.52	587418.51	454479.80	32°14'56.996"N	104°03'02.039"W	0.00	
3529.00†	7.000	61.128	3522.94	99.41	54.69	99.19	587429.18	454485.69	32°14'57.054"N	104°03'01.915"W	0.00	
3553.24†	7.000	61.128	3547.00	102.00	56.12	101.78	587431.77	454487.11	32°14'57.068"N	104°03'01.885"W	0.00	Z (G13: Cherry Cyn.)
3629.00†	7.000	61.128	3622.20	110.11	60.58	109.86	587439.85	454491.57	32°14'57.112"N	104°03'01.790"W	0.00	
3729.00†	7.000	61.128	3721.45	120.80	66.46	120.53	587450.52	454497.46	32°14'57.170"N	104°03'01.666"W	0.00	
3829.00†	7.000	61.128	3820.71	131.50	72.35	131.21	587461.20	454503.34	32°14'57.228"N	104°03'01.542"W	0.00	
3929.00†	7.000	61.128	3919.96	142.19	78.23	141.88	587471.87	454509.22	32°14'57.286"N	104°03'01.417"W	0.00	
4029.00†	7.000	61.128	4019.22	152.89	84.11	152.55	587482.54	454515.11	32°14'57.344"N	104°03'01.293"W	0.00	
4129.00†	7.000	61.128	4118.47	163.58	90.00	163.22	587493.21	454520.99	32°14'57.402"N	104°03'01.168"W	0.00	
4229.00†	7.000	61.128	4217.73	174.28	95.88	173.90	587503.88	454526.88	32°14'57.460"N	104°03'01.044"W	0.00	
4329.00†	7.000	61.128	4316.98	184.97	101.77	184.57	587514.55	454532.76	32°14'57.518"N	104°03'00.919"W	0.00	
4429.00†	7.000	61.128	4416.24	195.67	107.65	195.24	587525.22	454538.64	32°14'57.575"N	104°03'00.795"W	0.00	
4529.00†	7.000	61.128	4515.49	206.37	113.54	205.91	587535.89	454544.53	32°14'57.633"N	104°03'00.670"W	0.00	
4629.00†	7.000	61.128	4614.74	217.06	119.42	216.58	587546.57	454550.41	32°14'57.691"N	104°03'00.546"W	0.00	
4729.00†	7.000	61.128	4714.00	227.76	125.31	227.26	587557.24	454556.30	32°14'57.749"N	104°03'00.422"W	0.00	
4745.12†	7.000	61.128	4730.00	229.48	126.25	228.98	587558.96	454557.24	32°14'57.759"N	104°03'00.401"W	0.00	Z (G7: Brushy Cyn.)
4829.00†	7.000	61.128	4813.25	238.45	131.19	237.93	587567.91	454562.18	32°14'57.807"N	104°03'00.297"W	0.00	
4929.00†	7.000	61.128	4912.51	249.15	137.08	248.60	587578.58	454568.06	32°14'57.865"N	104°03'00.173"W	0.00	
5029.00†	7.000	61.128	5011.76	259.84	142.96	259.27	587589.25	454573.95	32°14'57.923"N	104°03'00.048"W	0.00	
5129.00†	7.000	61.128	5111.02	270.54	148.84	269.94	587599.92	454579.83	32°14'57.981"N	104°02'59.924"W	0.00	

Planned Wellpath Report

Ches Riddle Fed Com No. 202H Rev A.0

REFERENCE WELLPATH IDENTIFICATION

Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

WELLPATH DATA (175 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5229.00†	7.000	61.128	5210.27	281.24	154.73	280.62	587610.59	454585.72	32°14'58.039"N	104°02'59.799"W	0.00	
5329.00†	7.000	61.128	5309.53	291.93	160.61	291.29	587621.26	454591.60	32°14'58.097"N	104°02'59.675"W	0.00	
5429.00†	7.000	61.128	5408.78	302.63	166.50	301.96	587631.94	454597.48	32°14'58.155"N	104°02'59.550"W	0.00	
5529.00†	7.000	61.128	5508.04	313.32	172.38	312.63	587642.61	454603.37	32°14'58.213"N	104°02'59.426"W	0.00	
5611.07	7.000	61.128	5589.49	322.10	177.21	321.39	587651.36	454608.20	32°14'58.260"N	104°02'59.324"W	0.00	End of Tangent
5629.00†	6.821	61.128	5607.29	323.99	178.25	323.28	587653.25	454609.24	32°14'58.271"N	104°02'59.302"W	1.00	
5729.00†	5.821	61.128	5706.69	333.66	183.57	332.92	587662.89	454614.55	32°14'58.323"N	104°02'59.189"W	1.00	
5829.00†	4.821	61.128	5806.25	341.79	188.05	341.04	587671.01	454619.03	32°14'58.367"N	104°02'59.095"W	1.00	
5929.00†	3.821	61.128	5905.97	348.41	191.68	347.64	587677.61	454622.67	32°14'58.403"N	104°02'59.018"W	1.00	
6029.00†	2.821	61.128	6005.80	353.49	194.48	352.71	587682.68	454625.46	32°14'58.431"N	104°02'58.959"W	1.00	
6129.00†	1.821	61.128	6105.72	357.04	196.44	356.26	587686.23	454627.42	32°14'58.450"N	104°02'58.917"W	1.00	
6229.00†	0.821	61.128	6205.69	359.07	197.55	358.28	587688.25	454628.53	32°14'58.461"N	104°02'58.894"W	1.00	
6311.07	0.000	89.770	6287.75	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	1.00	End of Drop
6329.00†	0.000	89.770	6305.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
6351.32†	0.000	89.770	6328.00	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	Z (G4: BSGL (CS9))
6429.00†	0.000	89.770	6405.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
6529.00†	0.000	89.770	6505.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
6629.00†	0.000	89.770	6605.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
6729.00†	0.000	89.770	6705.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
6829.00†	0.000	89.770	6805.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
6929.00†	0.000	89.770	6905.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7029.00†	0.000	89.770	7005.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7089.32†	0.000	89.770	7066.00	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	Z (L5.3: FBSC)
7129.00†	0.000	89.770	7105.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7229.00†	0.000	89.770	7205.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7301.32†	0.000	89.770	7278.00	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	Z (L5.1: FBSG)
7329.00†	0.000	89.770	7305.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7429.00†	0.000	89.770	7405.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7529.00†	0.000	89.770	7505.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7559.32†	0.000	89.770	7536.00	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	Z (L4.3: SBSC)

Planned Wellpath Report

Ches Riddle Fed Com No. 202H Rev A.0

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

WELLPATH DATA (175 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7629.00†	0.000	89.770	7605.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7729.00†	0.000	89.770	7705.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7829.00†	0.000	89.770	7805.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
7929.00†	0.000	89.770	7905.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8029.00†	0.000	89.770	8005.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8120.32†	0.000	89.770	8097.00	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	Z (L4.1: SBSG)
8129.00†	0.000	89.770	8105.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8229.00†	0.000	89.770	8205.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8329.00†	0.000	89.770	8305.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8429.00†	0.000	89.770	8405.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8518.32†	0.000	89.770	8495.00	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	Z (L3.3: TBSC)
8529.00†	0.000	89.770	8505.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8629.00†	0.000	89.770	8605.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8729.00†	0.000	89.770	8705.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8729.32†	0.000	89.770	8706.00	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	Z (L3.3.2: Break Sand (T))
8829.00†	0.000	89.770	8805.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
8929.00†	0.000	89.770	8905.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
9029.00†	0.000	89.770	9005.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
9129.00†	0.000	89.770	9105.68	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	
9145.55	0.000	89.770	9122.24	359.58	197.83	358.79	587688.76	454628.82	32°14'58.464"N	104°02'58.888"W	0.00	End of Tangent
9229.00†	8.345	89.770	9205.39	365.65	197.86	364.86	587694.83	454628.84	32°14'58.464"N	104°02'58.817"W	10.00	
9265.18†	11.963	89.770	9241.00	372.02	197.88	371.23	587701.20	454628.87	32°14'58.464"N	104°02'58.743"W	10.00	Z (L3.1: TBSG)
9329.00†	18.345	89.770	9302.57	388.70	197.95	387.91	587717.87	454628.93	32°14'58.464"N	104°02'58.549"W	10.00	
9429.00†	28.345	89.770	9394.26	428.27	198.11	427.48	587757.45	454629.09	32°14'58.465"N	104°02'58.088"W	10.00	
9529.00†	38.345	89.770	9477.70	483.17	198.33	482.38	587812.34	454629.31	32°14'58.465"N	104°02'57.449"W	10.00	
9602.12†	45.657	89.770	9532.00	532.07	198.52	531.28	587861.23	454629.51	32°14'58.466"N	104°02'56.879"W	10.00	Z (L. TBSG)
9629.00†	48.345	89.770	9550.33	551.72	198.60	550.93	587880.88	454629.59	32°14'58.466"N	104°02'56.651"W	10.00	
9672.53†	52.698	89.770	9578.00	585.32	198.74	584.52	587914.48	454629.72	32°14'58.467"N	104°02'56.259"W	10.00	Z (L2: WFMP A)
9729.00†	58.345	89.770	9609.95	631.85	198.93	631.05	587961.00	454629.91	32°14'58.467"N	104°02'55.718"W	10.00	
9734.86†	58.930	89.770	9613.00	636.85	198.95	636.05	587966.00	454629.93	32°14'58.467"N	104°02'55.659"W	10.00	Z (X Sand (T))

Planned Wellpath Report

Ches Riddle Fed Com No. 202H Rev A.0

REFERENCE WELLPATH IDENTIFICATION

Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

WELLPATH DATA (175 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
9813.90†	66.834	89.770	9649.00	707.14	199.23	706.35	588036.29	454630.21	32°14'58.468"N	104°02'54.841"W	10.00	Z (X Sand (B))
9829.00†	68.345	89.770	9654.76	721.10	199.28	720.31	588050.25	454630.27	32°14'58.468"N	104°02'54.678"W	10.00	
9917.74†	77.219	89.770	9681.00	805.78	199.62	804.99	588134.92	454630.61	32°14'58.470"N	104°02'53.692"W	10.00	Z (Y Sand (T))
9929.00†	78.345	89.770	9683.38	816.79	199.67	815.99	588145.92	454630.65	32°14'58.470"N	104°02'53.564"W	10.00	
9945.55	80.000	89.770	9686.49	833.05	199.73	832.25	588162.18	454630.72	32°14'58.470"N	104°02'53.375"W	10.00	End of Build
10029.00†	85.007	89.770	9697.38	915.75	200.06	914.96	588244.88	454631.05	32°14'58.471"N	104°02'52.412"W	6.00	
10112.22	90.000	89.770	9701.00	998.87	200.40	998.07	588327.99	454631.38	32°14'58.472"N	104°02'51.444"W	6.00	End of Build
10129.00†	90.000	89.770	9701.00	1015.65	200.47	1014.85	588344.76	454631.45	32°14'58.472"N	104°02'51.249"W	0.00	
10229.00†	90.000	89.770	9701.00	1115.65	200.87	1114.85	588444.76	454631.85	32°14'58.474"N	104°02'50.084"W	0.00	
10329.00†	90.000	89.770	9701.00	1215.65	201.27	1214.85	588544.75	454632.25	32°14'58.475"N	104°02'48.920"W	0.00	
10429.00†	90.000	89.770	9701.00	1315.65	201.67	1314.85	588644.74	454632.65	32°14'58.476"N	104°02'47.756"W	0.00	
10529.00†	90.000	89.770	9701.00	1415.65	202.07	1414.85	588744.73	454633.05	32°14'58.478"N	104°02'46.591"W	0.00	
10629.00†	90.000	89.770	9701.00	1515.65	202.47	1514.85	588844.72	454633.46	32°14'58.479"N	104°02'45.427"W	0.00	
10729.00†	90.000	89.770	9701.00	1615.65	202.87	1614.85	588944.71	454633.86	32°14'58.480"N	104°02'44.263"W	0.00	
10829.00†	90.000	89.770	9701.00	1715.65	203.28	1714.84	589044.70	454634.26	32°14'58.482"N	104°02'43.098"W	0.00	
10929.00†	90.000	89.770	9701.00	1815.65	203.68	1814.84	589144.69	454634.66	32°14'58.483"N	104°02'41.934"W	0.00	
11029.00†	90.000	89.770	9701.00	1915.65	204.08	1914.84	589244.68	454635.06	32°14'58.484"N	104°02'40.769"W	0.00	
11129.00†	90.000	89.770	9701.00	2015.65	204.48	2014.84	589344.67	454635.46	32°14'58.486"N	104°02'39.605"W	0.00	
11229.00†	90.000	89.770	9701.00	2115.65	204.88	2114.84	589444.66	454635.86	32°14'58.487"N	104°02'38.441"W	0.00	
11329.00†	90.000	89.770	9701.00	2215.65	205.28	2214.84	589544.65	454636.27	32°14'58.488"N	104°02'37.276"W	0.00	
11429.00†	90.000	89.770	9701.00	2315.65	205.68	2314.84	589644.65	454636.67	32°14'58.490"N	104°02'36.112"W	0.00	
11529.00†	90.000	89.770	9701.00	2415.65	206.09	2414.84	589744.64	454637.07	32°14'58.491"N	104°02'34.948"W	0.00	
11629.00†	90.000	89.770	9701.00	2515.65	206.49	2514.84	589844.63	454637.47	32°14'58.492"N	104°02'33.783"W	0.00	
11729.00†	90.000	89.770	9701.00	2615.65	206.89	2614.84	589944.62	454637.87	32°14'58.493"N	104°02'32.619"W	0.00	
11829.00†	90.000	89.770	9701.00	2715.65	207.29	2714.84	590044.61	454638.27	32°14'58.495"N	104°02'31.455"W	0.00	
11929.00†	90.000	89.770	9701.00	2815.65	207.69	2814.84	590144.60	454638.67	32°14'58.496"N	104°02'30.290"W	0.00	
12029.00†	90.000	89.770	9701.00	2915.65	208.09	2914.84	590244.59	454639.08	32°14'58.497"N	104°02'29.126"W	0.00	
12129.00†	90.000	89.770	9701.00	3015.65	208.49	3014.83	590344.58	454639.48	32°14'58.499"N	104°02'27.961"W	0.00	
12229.00†	90.000	89.770	9701.00	3115.65	208.90	3114.83	590444.57	454639.88	32°14'58.500"N	104°02'26.797"W	0.00	
12329.00†	90.000	89.770	9701.00	3215.65	209.30	3214.83	590544.56	454640.28	32°14'58.501"N	104°02'25.633"W	0.00	

Planned Wellpath Report

Ches Riddle Fed Com No. 202H Rev A.0

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

WELLPATH DATA (175 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12429.00†	90.000	89.770	9701.00	3315.65	209.70	3314.83	590644.55	454640.68	32°14'58.502"N	104°02'24.468"W	0.00	
12529.00†	90.000	89.770	9701.00	3415.65	210.10	3414.83	590744.54	454641.08	32°14'58.504"N	104°02'23.304"W	0.00	
12629.00†	90.000	89.770	9701.00	3515.65	210.50	3514.83	590844.53	454641.48	32°14'58.505"N	104°02'22.140"W	0.00	
12729.00†	90.000	89.770	9701.00	3615.65	210.90	3614.83	590944.53	454641.89	32°14'58.506"N	104°02'20.975"W	0.00	
12829.00†	90.000	89.770	9701.00	3715.65	211.30	3714.83	591044.52	454642.29	32°14'58.507"N	104°02'19.811"W	0.00	
12929.00†	90.000	89.770	9701.00	3815.65	211.71	3814.83	591144.51	454642.69	32°14'58.509"N	104°02'18.647"W	0.00	
13029.00†	90.000	89.770	9701.00	3915.65	212.11	3914.83	591244.50	454643.09	32°14'58.510"N	104°02'17.482"W	0.00	
13129.00†	90.000	89.770	9701.00	4015.65	212.51	4014.83	591344.49	454643.49	32°14'58.511"N	104°02'16.318"W	0.00	
13229.00†	90.000	89.770	9701.00	4115.65	212.91	4114.83	591444.48	454643.89	32°14'58.512"N	104°02'15.153"W	0.00	
13329.00†	90.000	89.770	9701.00	4215.65	213.31	4214.82	591544.47	454644.29	32°14'58.514"N	104°02'13.989"W	0.00	
13429.00†	90.000	89.770	9701.00	4315.65	213.71	4314.82	591644.46	454644.69	32°14'58.515"N	104°02'12.825"W	0.00	
13529.00†	90.000	89.770	9701.00	4415.65	214.11	4414.82	591744.45	454645.10	32°14'58.516"N	104°02'11.660"W	0.00	
13629.00†	90.000	89.770	9701.00	4515.65	214.52	4514.82	591844.44	454645.50	32°14'58.517"N	104°02'10.496"W	0.00	
13729.00†	90.000	89.770	9701.00	4615.65	214.92	4614.82	591944.43	454645.90	32°14'58.519"N	104°02'09.332"W	0.00	
13829.00†	90.000	89.770	9701.00	4715.65	215.32	4714.82	592044.42	454646.30	32°14'58.520"N	104°02'08.167"W	0.00	
13929.00†	90.000	89.770	9701.00	4815.65	215.72	4814.82	592144.41	454646.70	32°14'58.521"N	104°02'07.003"W	0.00	
14029.00†	90.000	89.770	9701.00	4915.65	216.12	4914.82	592244.41	454647.10	32°14'58.522"N	104°02'05.839"W	0.00	
14129.00†	90.000	89.770	9701.00	5015.65	216.52	5014.82	592344.40	454647.50	32°14'58.524"N	104°02'04.674"W	0.00	
14229.00†	90.000	89.770	9701.00	5115.65	216.92	5114.82	592444.39	454647.91	32°14'58.525"N	104°02'03.510"W	0.00	
14329.00†	90.000	89.770	9701.00	5215.65	217.33	5214.82	592544.38	454648.31	32°14'58.526"N	104°02'02.345"W	0.00	
14429.00†	90.000	89.770	9701.00	5315.65	217.73	5314.82	592644.37	454648.71	32°14'58.527"N	104°02'01.181"W	0.00	
14529.00†	90.000	89.770	9701.00	5415.65	218.13	5414.81	592744.36	454649.11	32°14'58.528"N	104°02'00.017"W	0.00	
14629.00†	90.000	89.770	9701.00	5515.65	218.53	5514.81	592844.35	454649.51	32°14'58.530"N	104°01'58.852"W	0.00	
14729.00†	90.000	89.770	9701.00	5615.65	218.93	5614.81	592944.34	454649.91	32°14'58.531"N	104°01'57.688"W	0.00	
14750.66	90.000	89.770	9701.00[1]	5637.31	219.02	5636.47	592966.00	454650.00	32°14'58.531"N	104°01'57.436"W	0.00	End of Tangent

Planned Wellpath Report

Ches Riddle Fed Com No. 202H Rev A.0

REFERENCE WELLPATH IDENTIFICATION

Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

HOLE & CASING SECTIONS - Ref Wellbore: Ches Riddle Fed Com No. 202H Ref Wellpath: Ches Riddle Fed Com No. 202H Rev A.0

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing	29.00	2676.39	2647.39	29.00	2676.00	0.00	0.00	7.66	13.89
7in Casing	29.00	9942.76	9913.76	29.00	9686.00	0.00	0.00	199.72	829.50

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Ches Riddle 202H FTP rev 1		9701.00	200.02	898.08	**588228.00**	**454631.00**	32°14'58.471"N	104°02'52.608"W	point
Ches Riddle 202H LTP rev 1		9701.00	218.02	5546.47	**592876.00**	**454649.00**	32°14'58.524"N	104°01'58.484"W	point
1) Ches Riddle 202H PBHL rev 1	14750.66	9701.00	219.02	5636.47	**592966.00**	**454650.00**	32°14'58.531"N	104°01'57.436"W	point

SURVEY PROGRAM - Ref Wellbore: Ches Riddle Fed Com No. 202H Ref Wellpath: Ches Riddle Fed Com No. 202H Rev A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
29.00	2676.00	BHI NaviTrak (Standard)		Ches Riddle Fed Com No. 202H
2676.00	9935.00	BHI NaviTrak (Standard)		Ches Riddle Fed Com No. 202H
9935.00	14840.92	BHI NaviTrak (Standard)		Ches Riddle Fed Com No. 202H

Planned Wellpath Report

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1006.00	0.000	61.128	1006.00	Top of Salt Z (Castile)
2646.32	3.963	61.128	2646.00	Base of Salt Z (G30:CS14-CSB)
2689.43	4.394	61.128	2689.00	Z (G26: Bell Cyn.)
3553.24	7.000	61.128	3547.00	Z (G13: Cherry Cyn.)
4745.12	7.000	61.128	4730.00	Z (G7: Brushy Cyn.)
6351.32	0.000	89.770	6328.00	Z (G4: BSGL (CS9))
7089.32	0.000	89.770	7066.00	Z (L5.3: FBSC)
7301.32	0.000	89.770	7278.00	Z (L5.1: FBSG)
7559.32	0.000	89.770	7536.00	Z (L4.3: SBSC)
8120.32	0.000	89.770	8097.00	Z (L4.1: SBSG)
8518.32	0.000	89.770	8495.00	Z (L3.3: TBSC)
8729.32	0.000	89.770	8706.00	Z (L3.3.2: Break Sand (T))
9265.18	11.963	89.770	9241.00	Z (L3.1: TBSG)
9602.12	45.657	89.770	9532.00	Z (L. TBSG)
9672.53	52.698	89.770	9578.00	Z (L2: WFMP A)
9734.86	58.930	89.770	9613.00	Z (X Sand (T))
9813.90	66.834	89.770	9649.00	Z (X Sand (B))
9917.74	77.219	89.770	9681.00	Z (Y Sand (T))

Planned Wellpath Report

Ches Riddle Fed Com No. 202H Rev A.0

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Matador Resources**	Slot	**Ches Riddle Fed Com No. 202H**
Area	**Eddy County, NM**	Well	**Ches Riddle Fed Com No. 202H**
Field	**Willow Lake; Bone Spring (Eddy Co., NM)**	Wellbore	**Ches Riddle Fed Com No. 202H**
Facility	**Ches Riddle Fed Com Pad**		

DESIGN COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
29.00	0.000	61.128	29.00	Tie On
2250.00	0.000	61.128	2250.00	End of Tangent
2950.00	7.000	61.128	2948.26	End of Build
5611.07	7.000	61.128	5589.49	End of Tangent
6311.07	0.000	89.770	6287.75	End of Drop
9145.55	0.000	89.770	9122.24	End of Tangent
9945.55	80.000	89.770	9686.49	End of Build
10112.22	90.000	89.770	9701.00	End of Build
14750.66	90.000	89.770	9701.00	End of Tangent

Ches Riddle Fed Com #202H
SHL: 1863' FNL & 568' FEL Section 2
BHL: 1676' FNL & 240' FEL Section 1
Township/Range: 24S 28E
Elevation Above Sea Level: 2,979'

Drilling Operation Plan

Proposed Drilling Depth: 14750' MD / 9701' TVD

Type of well: Horizontal well, no pilot hole

Permitted Well Type: Gas

Geologic Name of Surface Formation Quaternary Deposits

KOP Lat/Long (NAD27): 32°14' 58.464" N / 104° 02' 58.888" W
TD Lat/Long (NAD27): 32° 14' 58.531" N / 104° 01' 57.436" W

1. Estimated Tops

Formation	MD (ft)	TVD (ft)	Thickness (ft)	Lithology	Resource
Top of Salt	473	473	533	Salt	Barren
Castile	1,006	1,006	1,640	Salt	Barren
Base of Salt	2,646	2,646	43	Salt	Barren
Bell Canyon	2,689	2,689	858	Sandstone	Oil/Natural Gas
Cherry Canyon	3,547	3,547	1,183	Sandstone	Oil/Natural Gas
Brushy Canyon	4,730	4,730	1,598	Sandstone	Oil/Natural Gas
Bone Spring Lime	6,328	6,328	738	Limestone	Oil/Natural Gas
1st Bone Spring Carbonate	7,066	7,066	212	Carbonate	Oil/Natural Gas
1st Bone Spring Sand	7,278	7,278	258	Sandstone	Oil/Natural Gas
2nd Bone Spring Carbonate	7,536	7,536	561	Carbonate	Oil/Natural Gas
2nd Bone Spring Sand	8,097	8,097	398	Sandstone	Oil/Natural Gas
3rd Bone Spring Carbonate	8,495	8,495	627	Carbonate	Oil/Natural Gas
KOP	**9,145**	**9,122**			**Oil/Natural Gas**
3rd Bone Spring Sand	9,265	9,241	337	Sandstone	Oil/Natural Gas
Wolfcamp	9,672	9,578		Shale	Oil/Natural Gas
TD	**14,750**	**9,701**			**Oil/Natural Gas**

2. Notable Zones

Wolfcamp is the goal. All perforations will be within the setback requirements as prescribed or permitted by the New Mexico Oil Conservation Division. OSE estimated ground water depth at this location is 140'

3. Pressure Control

Equipment
A 12,000' 5000-psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and one annular preventer will be utilized below surface casing to TD. See attachments for BOP and choke manifold diagrams.

An accumulator complying with Onshore Order #2 requirements for the pressure rating of the BOP stack will be present. A rotating head will also be installed as needed.

<u>Testing Procedure</u>
BOP will be inspected and operated as required in Onshore Order #2. Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position.

A third party company will test the BOPs.

After setting surface casing, a minimum 5M BOPE system will be installed. Test pressures will be 250 psi low and 5000 psi high with the annular being tested to 250 psi low and 2500 psi high before drilling below surface shoe. In the event that the rig drills multiple wells on the pad and any seal subject to test pressures are broken, a full BOP test will be performed when the rig returns and the 5M BOPE system is re-installed.

<u>Variance Request</u>
Matador requests a variance to have the option of running a speed head for setting the Intermediate 1, Intermediate 2, and Production Strings.

Matador requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

Matador requests a variance to have the option of batch drilling this well with other wells on the same pad. In the event that this well is batch drilled, the wellbore will be secured with a blind flange of like pressure. When the rig returns to this well and BOPs are installed, the operator will perform a full BOP test.

Matador requests a variance to run 7-5/8” BTC casing inside 9-5/8” BTC casing which will be less than the 0.422” stand off regulation. Matador has met with Christopher Walls and Mustafa Haque as well as other BLM representatives and determined that this would be acceptable as long as the 7-5/8” flush casing was run throughout the entire 300’ cement tie back section between 9-5/8” and 7-5/8” casing.

4. <u>Casing & Cement</u>

All casing will be API and new. See attached casing assumption worksheet.

String	Hole Size (in)	Set MD (ft)	Set TVD (ft)	Casing Size (in)	Wt. (lb/ft)	Grade	Joint	Collapse	Burst	Tension
Surface	17.5	0 - 498	0 - 498	13.375	54.5	J-55	BUTT	1.125	1.125	1.8
Intermediate 1	12.25	0 - 2739	0 - 2739	9.625	40	J-55	BUTT	1.125	1.125	1.8
Intermediate 2 Top	8.75	0 - 2439	0 - 2439	7.625	29.7	P-110	BUTT	1.125	1.125	1.8
Intermediate 2 Middle	8.75	2439 - 9045	2439 - 9045	7.625	29.7	P-110	VAM HTF-NR	1.125	1.125	1.8
Intermediate 2 Bottom	8.75	9045 - 9945	9045 - 9686	7	29	P-110	BUTT	1.125	1.125	1.8
Production Top	6.125	0 - 8945	0 - 8945	5.5	20	P-110	DWC/C-IS MS	1.125	1.125	1.8
Production Bottom	6.125	8945 - 14750	8945 - 9701	4.5	13.5	P-110	DWC/C-IS HT	1.125	1.125	1.8

- All casing strings will be tested in accordance with Onshore Order #2 - III.B.1.h

String	Type	Sacks	Yield	Cu. Ft.	Weight	Percent Excess	Top of Cement	Blend
Surface	Lead	220	1.72	371	12.5	100%	0	5% NaCl + LCM
	Tail	330	1.38	452	14.8	100%	198	5% NaCl + LCM

Intermediate 1	Lead	500	2.13	1066	12.6	50%	0	Bentonite + 1% CaCL2 + 8% NaCl + LCM
	Tail	210	1.38	291	14.8	50%	2191	5% NaCl + LCM
Intermediate 2	Lead	410	2.13	883	11	35%	2439	Fluid Loss + Dispersant + Retarder + LCM
	Tail	170	1.38	233	14.8	35%	8945	Fluid Loss + Dispersant + Retarder + LCM
Production	Tail	480	1.17	558	15.8	10%	9445	Fluid Loss + Dispersant + Retarder + LCM

5. Mud Program

An electronic Pason mud monitoring system complying with Onshore Order 2 will be used. All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions.

Hole Section	Hole Size (in)	Mud Type	Interval MD (ft)	Density (lb/gal)	Viscosity	Fluid Loss
Surface	17.5	Spud Mud	0 - 498	8.4 - 8.8	28-30	NC
Intermediate 1	12.25	Brine Water	498 - 2739	9.5 - 10.2	28-30	NC
Intermediate 2	8.75	FW/Cut Brine	2739 - 9945	8.4 - 9.4	28-30	NC
Production	6.125	OBM	9945 - 14750	11.5 - 12.5	30-35	<20

6. Cores, Test, & Logs

No core or drill stem test is planned.

A 2-person mud logging program will be used from Intermediate 2 Casing shoe to TD.

No electric logs are planned at this time. GR will be collected through the MWD tools from Intermediate casing to TD. CBL with CCL will be run as far as gravity will let it fall to top of curve.

7. Down Hole Conditions

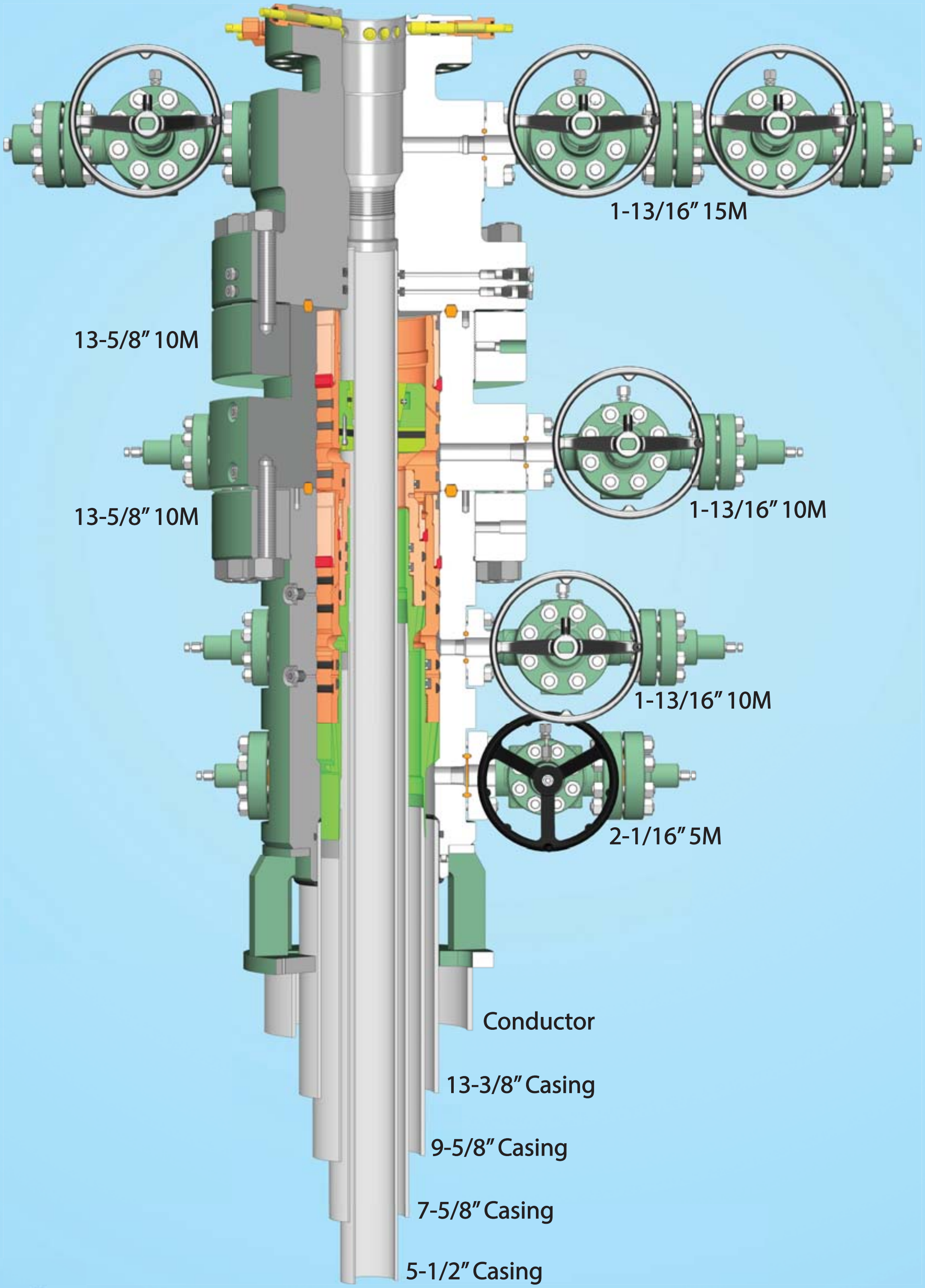
No abnormal pressure or temperature is expected. Maximum anticipated surface pressure is 4171.43 psi. Expected bottom hole temperature is 155 F.

In accordance with Onshore Order 6, Matador does not anticipate that there will be enough H2S from the surface to the Bone Spring formations to meet the BLM’s minimum requirements for the submission of an "H2S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H2S safety package on all wells, attached is an "H2S Drilling Operations Plan". Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

CAMERON
A Schlumberger Company

13-5/8" 10M MN-DS Wellhead

Four Stage MN-DS



Matador
RESOURCES COMPANY

2018-083-03

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

X Original
☐ Amended
Reason for Amendment:______________________________

Operator & OGRID No.: Matador Production Company (228937)
Date: 6/28/2018

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: A C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule 19.15.18.12.A

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Ches Riddle Fed Com #112H	N/A	UL-E Sec 01 T24S R28E	###FNL ###FWL	~1000	~21 days	Flare ~21 days on flowback before turn into TB. Time est. depends on sales connect and well cleanup.
Ches Riddle Fed Com #122H	N/A	UL-E Sec 01 T24S R28E	###FNL ###FWL	~1,200	~21 days	Flare ~21 days on flowback before turn into TB. Time est. depends on sales connect and well cleanup.
Ches Riddle Fed Com #202H	N/A	UL-E Sec 01 T24S R28E	###FNL ###FWL	~2,500	~21 days	Flare ~21 days on flowback before turn into TB. Time est. depends on sales connect and well cleanup.
Ches Riddle Fed Com #206H	N/A	UL-E Sec 01 T24S R28E	###FNL ###FWL	~2,500	~21 days	Flare ~21 days on flowback before turn into TB. Time est. depends on sales connect and well cleanup.
Ches Riddle Fed Com #222H	N/A	UL-E Sec 01 T24S R28E	###FNL ###FWL	~9,000	~21 days	Flare ~21 days on flowback before turn into TB. Time est. depends on sales connect and well cleanup.

Ches Riddle Fed Com #226H	N/A	UL-E Sec 01 T24S R28E	###FNL ###FWL	~9,000	~21 days	Flare ~21 days on flowback before turn into TB. Time est. depends on sales connect and well cleanup.

Gathering System and Pipeline Notification

The well will be connected to a production facility after flowback operations are complete so long as the gas transporter system is in place. The gas produced from the production facility should be connected to Longwood RB Pipeline, LLC gathering system. It will require ~4,500' of pipeline to connect the facility to a low/high pressure gathering system. Matador Production Company periodically provides a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future to Longwood RB Pipeline, LLC. If changes occur that will affect the drilling and completion schedule, Matador Production Company will notify Longwood RB Pipeline, LLC. Additionally, the gas produced from the well will be processed at a processing plant further downstream and, although unanticipated, any issues with downstream facilities could cause flaring at the wellhead. The actual flow of the gas will be based on compression operating parameters and gathering system pressures measured when the well starts producing.

Flowback Strategy

After the fracture treatment/completion operations (flowback), the well will be produced to temporary production tanks and the gas will be flared or vented. During flowback, the fluids and sand content will be monitored. If the produced fluids contain minimal sand, then the well will be turned to production facilities. The gas sales should start as soon as the well starts flowing through the production facilities, unless there are operational issues on the midstream system at that time. Based on current information, it is Matador's belief the system will be able to take the gas upon completion of the well.

Safety requirements during cleanout operations may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Operating a generator will only utilize a portion of the produced gas and the remainder of gas would still need to be flared.
  - Power Company has to be willing to purchase gas back and if they are willing they require a 5 year commitment to supply the agreed upon amount of power back to them. With gas decline rates and unpredictability of markets it is impossible to agree to such long term demands. If the demands are not met then operator is burdened with penalty for not delivering.
- Compressed Natural Gas – On lease
  - Compressed Natural Gas is likely to be uneconomic to operate when the gas volume declines.
- NGL Removal – On lease
  - NGL Removal requires a plant and is expensive on such a small scale rendering it uneconomic and still requires residue gas to be flared.