

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**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No.  6. If Indian, Allottee or Tribe Name  7. If Unit or CA Agreement, Name and No.  8. Lease Name and Well No.
2. Name of Operator		9. API Well No. 30 015 46953
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
13. State		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
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.<br>2. A Drilling Plan.<br>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).<br>5. Operator certification.<br>6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
Office		

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

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



(Continued on page 2)

\*(Instructions on page 2)  
Entered 04/02/2020 - 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

<sup>1</sup> API Number <b>30-015- 46953</b>	<sup>3</sup> Pool Code <b>15011</b>	<sup>3</sup> Pool Name <b>CULEBRA BLUFF; BONE SPRING, SOUTH</b>
<sup>4</sup> Property Code <b>326901</b>	<sup>5</sup> Property Name <b>WARRIOR FED COM 2734 B</b>	
<sup>7</sup> OGRID NO. <b>373013</b>	<sup>8</sup> Operator Name <b>RIDGE RUNNER RESOURCES OPERATING, LLC</b>	<sup>6</sup> Well Number <b>3H</b>
		<sup>9</sup> Elevation <b>3076'</b>

<sup>10</sup> Surface Location

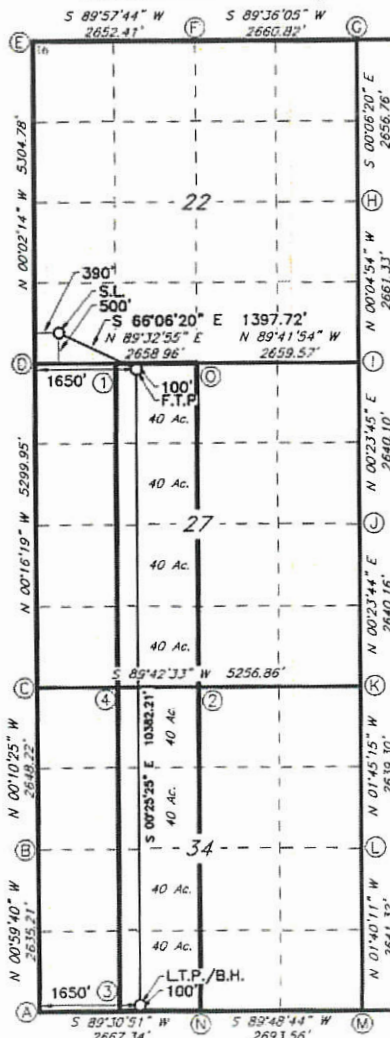
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
<b>M</b>	<b>22</b>	<b>22S</b>	<b>28E</b>		<b>500</b>	<b>SOUTH</b>	<b>390</b>	<b>WEST</b>	<b>EDDY</b>

<sup>11</sup> 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
<b>N</b>	<b>34</b>	<b>22S</b>	<b>28E</b>		<b>100</b>	<b>SOUTH</b>	<b>1650</b>	<b>WEST</b>	<b>EDDY</b>

<sup>12</sup> Dedicated Acres <b>320.00</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code <b>C</b>	<sup>15</sup> Order No.
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No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.



**GEODETIC DATA**  
NAD 83 GRID - NM EAST  
**SURFACE LOCATION (S.L.)**  
N 499292.1 - E 618689.5  
LAT: 32.3723747° N  
LONG: 104.0827837° W  
**FIRST TAKE POINT (F.T.P.)**  
N 498702.2 - E 619949.9  
LAT: 32.3707449° N  
LONG: 104.0787056° W  
**LAST TAKE POINT (L.T.P.) / BOTTOM HOLE (B.H.)**  
N 488322.6 - E 620026.6  
LAT: 32.3422129° N  
LONG: 104.0785371° W

**CORNER DATA**  
NAD 83 GRID - NM EAST  
A: FOUND BRASS CAP "1916"  
N 488208.7 - E 618378.8  
B: FOUND BRASS CAP "1943"  
N 490842.9 - E 618333.0  
C: FOUND BRASS CAP "1943"  
N 493490.5 - E 618325.0  
D: FOUND BRASS CAP "1943"  
N 498789.1 - E 618299.9  
E: FOUND BRASS CAP "1943"  
N 504092.7 - E 618296.4  
F: FOUND BRASS CAP "1943"  
N 504094.4 - E 620948.2  
G: FOUND BRASS CAP "1943"  
N 504112.9 - E 623608.4  
H: FOUND BRASS CAP "1943"  
N 501456.8 - E 623613.3  
I: FOUND BRASS CAP "1943"  
N 498796.1 - E 623617.0  
J: FOUND BRASS CAP "1943"  
N 496156.7 - E 623598.8  
K: FOUND BRASS CAP "1943"  
N 493517.2 - E 623580.6  
L: FOUND BRASS CAP "1943"  
N 490879.7 - E 623661.4  
M: FOUND BRASS CAP "1942"  
N 488240.1 - E 623738.3  
N: NAIL IN STONE CIRCLE  
N 488231.3 - E 621045.4  
O: FOUND BRASS CAP "1943"  
N 498810.1 - E 620958.1

**CALCULATED POINTS**  
1: N 498799.6 - E 619629.0  
2: N 493503.8 - E 620952.8  
3: N 488220.0 - E 619712.1  
4: N 493497.1 - E 619636.9

<sup>17</sup> 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.

**2-12-19**  
Signature **BRIAN WOOD** Date  
Printed Name  
**brian@permitswest.com**  
E-mail Address  
**505 466-8120**

<sup>18</sup> 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 and correct to the best of my belief.

**12-11-2018**  
Date of Survey  
Signature and Seal of **JEFFREY L. FANSLER**  
**10034**  
**10034**  
Certificate Number

Job No.: LS18111310

# PECOS DISTRICT

## DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>Ridge Runner Resources Operating LLC</b>
<b>LEASE NO.:</b>	<b>NMNM19842B</b>
<b>WELL NAME &amp; NO.:</b>	<b>Warrior Fed Com 2734 B 3H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>500'/S &amp; 390'/E</b>
<b>BOTTOM HOLE FOOTAGE:</b>	<b>100'/S &amp; 1650'/E</b>
<b>LOCATION:</b>	<b>Section 22, T.22 S., R.28 E., NMPM</b>
<b>COUNTY:</b>	<b>Eddy County, New Mexico</b>

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> 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

1. The **13-3/8** inch surface casing shall be set at approximately **300** 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 **8**

**hours** 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 minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

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 Medium Cave/Karst Areas 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 X 5 1/2** inch production casing is:
- Cement should tie-back at least **200 feet** into previous casing string. 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. 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)**

##### **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, 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. When the Communitization Agreement number is known, it shall also be on the sign.

## 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<sup>nd</sup> 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 integrity 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 integrity 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.

**JJP003032020**



U.S. Department of the Interior  
BUREAU OF LAND MANAGEMENT

# Operator Certification Data Report

03/31/2020

## 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:** Brian Wood

**Signed on:** 02/15/2019

**Title:** President

**Street Address:** 37 Verano Looop

**City:** Santa Fe

**State:** NM

**Zip:** 87508

**Phone:** (505)466-8120

**Email address:** afmss@permitswest.com

## Field Representative

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**



APD ID: 10400039138

Submission Date: 02/15/2019

Highlighted data  
reflects the most  
recent changes

Operator Name: RIDGE RUNNER RESOURCES OPERATING LLC

Well Name: WARRIOR FED COM 2734 B

Well Number: 3H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

## Section 1 - General

APD ID: 10400039138

Tie to previous NOS? N

Submission Date: 02/15/2019

BLM Office: CARLSBAD

User: Brian Wood

Title: President

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM019842B

Lease Acres: 280

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? YES

APD Operator: RIDGE RUNNER RESOURCES OPERATING LLC

Operator letter of designation:

## Operator Info

Operator Organization Name: RIDGE RUNNER RESOURCES OPERATING LLC

Operator Address: 1004 N. Big Spring Street, Suite 325

Zip: 79701

Operator PO Box:

Operator City: Midland

State: TX

Operator Phone: (432)684-7877

Operator Internet Address:

## 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: WARRIOR FED COM 2734 B

Well Number: 3H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: CULEBRA BLUFF

Pool Name: BONE SPRING,  
SOUTH

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



**Operator Name:** RIDGE RUNNER RESOURCES OPERATING LLC

**Well Name:** WARRIOR FED COM 2734 B

**Well Number:** 3H

**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,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:**  
WARRIOR FED COM 2734 W

**Number:** 1H

**Well Class:** HORIZONTAL

**Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** CONVENTIONAL GAS WELL

**Describe Well Type:**

**Well sub-Type:** INFILL

**Describe sub-type:**

**Distance to town:** 6 Miles

**Distance to nearest well:** 30 FT

**Distance to lease line:** 625 FT

**Reservoir well spacing assigned acres Measurement:** 640 Acres

**Well plat:** Warrior\_2734\_3H\_Plat\_GasCap\_Plan\_20190214161529.pdf

**Well work start Date:** 05/01/2019

**Duration:** 120 DAYS

### Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83

**Vertical Datum:** NAVD88

**Survey number:** 10034

**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	500	FSL	390	FW L	22S	28E	22	Aliquot SWS W	32.37237 47	- 104.0827 837	EDD Y	NEW MEXI CO	NEW MEXI CO	F	FEE	307 6	0	0	
KOP Leg #1	483	FSL	136 3	FW L	22S	28E	22	Aliquot SESW	32.37232 82	- 104.0796 838	EDD Y	NEW MEXI CO	NEW MEXI CO	F	FEE	- 578 4	910 7	886 0	
PPP Leg #1-1	0	FNL	165 0	FW L	22S	28E	34	Aliquot NENW	32.35645 2	- 104.0786 2	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 019842 B	- 627 4	152 02	935 0	

**Operator Name:** RIDGE RUNNER RESOURCES OPERATING LLC

**Well Name:** WARRIOR FED COM 2734 B

**Well Number:** 3H

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	350	FSL	1545	FWL	22S	28E	22	Aliquot SESW	32.371964	- 104.0790434	EDD Y	NEW MEXICO	NEW MEXICO	F	FEE	- 6124	9544	9200	
EXIT Leg #1	100	FSL	1650	FWL	22S	28E	34	Aliquot SESW	32.3422129	- 104.0785371	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 016331	- 6274	20382	9350	
BHL Leg #1	100	FSL	1650	FWL	22S	28E	34	Aliquot SESW	32.3422129	- 104.0785371	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 016331	- 6274	20382	9350	

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**

Date: 2-12-19

X Original

Operator & OGRID No.: Ridge Runner Resources Operating, LLC (373013)

☐ Amended - Reason for Amendment: \_\_\_\_\_

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

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

**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 & Number	API	SHL (ULSTR)	SHL Footages	Expected MCF/D	Flare or Vent	Comments
Warrior Fed Com 2734 W 1H	30-015-	M-22-22s-28e	500' FSL & 330' FWL	5000	<30 days	flare until well clean, then connect
Warrior Fed Com 2734 B 1H	30-015-	M-22-22s-28e	500' FSL & 360' FWL	750	<30 days	flare until well clean, then connect
Warrior Fed Com 2734 B 3H	30-015-	M-22-22s-28e	500' FSL & 390' FWL	750	<30 days	flare until well clean, then connect

**Gathering System and Pipeline Notification**

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is not yet dedicated, but will be connected to a 3<sup>rd</sup> party gathering system located in Eddy County, New Mexico. (DCP has lines 1.5 miles southeast.) It will require an unknown length of pipeline to connect the facility to a gathering system. Operator provides (periodically) to Gas Transporter a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Operator and Gas Transporter have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at an unknown Processing Plant located in Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

**Flowback Strategy**

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

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems 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
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines



APD ID: 10400039138

Submission Date: 02/15/2019

Highlighted data  
reflects the most  
recent changes

Operator Name: RIDGE RUNNER RESOURCES OPERATING LLC

Well Name: WARRIOR FED COM 2734 B

Well Number: 3H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
398460	QUATERNARY	3076	0	0	OTHER : Caliche	USEABLE WATER	N
398461	RUSTLER ANHYDRITE	2825	250	250		NONE	N
398463	TOP SALT	2595	480	480		NONE	N
398464	DELAWARE	375	2700	2700	LIMESTONE	NONE	N
398465	BELL CANYON	350	2725	2725	SANDSTONE	NATURAL GAS, OIL	N
398466	CHERRY CANYON	-755	3830	3830	SANDSTONE	NATURAL GAS, OIL	N
398467	BRUSHY CANYON	-1775	4850	4850	SANDSTONE	NATURAL GAS, OIL	N
398468	BONE SPRING	-3070	6145	6145	LIMESTONE	NATURAL GAS, OIL	N
398462	BONE SPRING 1ST	-4100	7175	7179	SANDSTONE	NATURAL GAS, OIL	N
398469	BONE SPRING 2ND	-4925	8000	8114	SANDSTONE	NATURAL GAS, OIL	N
398458	BONE SPRING 3RD	-5250	8325	8489	OTHER : Carbonate	NATURAL GAS, OIL	N
398470	BONE SPRING 3RD	-6125	9200	9544	SANDSTONE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 12000

**Equipment:** Top drive will have an IBOP in lieu of Kelly cocks. A floor safety valve (i. e., TIW valve) will be available when tripping. In the event a walking rig is used, a variance is requested to use a flexible choke line with flanged ends between the BOP and choke manifold. The line will be kept as straight as possible with minimal turns. Actual specifications and certification will be provided via Sundry Notice if this option is exercised.

**Requesting Variance?** YES

**Variance request:** A variance is requested to use a 13.625" 5000 psi multi-bowl wellhead. When the BOP is initially installed after running the 13.375" (surface) casing, it will be tested to the 5M test pressure of the 8.5" interval. The 9.625" (intermediate) casing will be run with a mandrel hanger and without breaking any connections on the BOP. Thus, not



**Operator Name:** RIDGE RUNNER RESOURCES OPERATING LLC

**Well Name:** WARRIOR FED COM 2734 B

**Well Number:** 3H

requiring an additional BOP test.

**Testing Procedure:** A 5000 psi BOP system will be installed and tested to 3000 psi parameters before drilling the intermediate hole. Annular will be tested to 1500 psi. Double (pipe and blind) ram BOP will be tested to 3000 psi. This is based on:  $9625' \text{ TVD} \times 10 \text{ ppg mud} \times 0.052 = 5005 \text{ psi}$  –  $9625' \times 0.22 \text{ psi/ft} = 2118 \text{ psi}$  2887 psi The installed 5000 psi BOP system will be tested to 5000 psi parameters before drilling the production hole. Annular will be tested to 2500 psi. Double (pipe and blind) ram BOP will be tested to 5000 psi. Since a non-tapered drill string will be used, a double ram preventer is adequate. This is based on:  $10300' \text{ TVD} \times 12.8 \text{ ppg mud} \times 0.052 = 6856 \text{ psi}$  –  $10300' \times 0.22 \text{ psi/ft} = 2266 \text{ psi}$  4590 psi BOPE will be tested by an independent service company to 250 psi low and the high pressures stated above as required by Onshore Order 2. The system may be upgraded to a higher pressure, but will still be tested to the pressures stated above. Pipe rams will be functioned daily. Blind rams will be functioned on each trip when out of the hole. Annular will be functioned weekly. BOP will be tested on initial installation, whenever a seal is broken, following repairs, or every 30 days.

**Choke Diagram Attachment:**

Warrior\_2734\_3H\_Choke\_BOP\_20190215093639.pdf

**BOP Diagram Attachment:**

Warrior\_2734\_3H\_Choke\_BOP\_20190215093650.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	450	0	450	3076		450	J-55	54.5	ST&C	5.37	12.96	DRY	24.3	DRY	24.3
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	9010	0	8777	3076		9010	L-80	47	BUTT	1.26	1.51	DRY	2.72	DRY	2.72
3	PRODUCTION	8.5	7.0	NEW	API	Y	0	9010	0	8777	3076		9010	P-110	26	OTHER - CDC	1.37	2.18	DRY	3.56	DRY	3.56
4	PRODUCTION	8.5	5.5	NEW	API	Y	9010	20382	8777	9350			11372	P-110	20	OTHER - CDC	2.76	2.47	DRY	57.8	DRY	57.8

### Casing Attachments

**Operator Name:** RIDGE RUNNER RESOURCES OPERATING LLC

**Well Name:** WARRIOR FED COM 2734 B

**Well Number:** 3H

### Casing Attachments

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Warrior\_2734\_3H\_Casing\_Design\_Assumptions\_20190215094333.pdf

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Warrior\_2734\_3H\_Casing\_Design\_Assumptions\_20190215094530.pdf

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**Casing ID:** 3      **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

Warrior\_2734\_3H\_7in\_Casing\_Spec\_20190215094128.pdf

**Casing Design Assumptions and Worksheet(s):**

Warrior\_2734\_3H\_Casing\_Design\_Assumptions\_20190215094522.pdf

---

**Operator Name:** RIDGE RUNNER RESOURCES OPERATING LLC

**Well Name:** WARRIOR FED COM 2734 B

**Well Number:** 3H

## Casing Attachments

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

Warrior\_2734\_3H\_5in\_Casing\_Spec\_20190215095543.pdf

**Casing Design Assumptions and Worksheet(s):**

Warrior\_2734\_3H\_Casing\_Design\_Assumptions\_20190215094540.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	450	0	0	0	0	0	None	None
SURFACE	Tail		0	450	465	1.34	14.8	623	100	Class C	2% CaCl
INTERMEDIATE	Lead	2700	0	2700	660	2.19	12.7	1445	100	Class c	6% gel + 5% salt + additives
INTERMEDIATE	Tail		0	2700	100	1.32	14.8	132	100	Class H	Additives
PRODUCTION	Lead		0	8510	0	0	0	0	0	None	None
PRODUCTION	Tail		0	8510	0	0	0	0	0	None	None
INTERMEDIATE	Lead	2700	2700	9010	1090	2.5	11.3	2725	50	TXI light	5% salt + 4% SMS + additives
INTERMEDIATE	Tail		2700	9010	200	1.19	15.6	238	50	Class H	Additives
PRODUCTION	Lead		8510	2038 2	0	0	0	0	0	None	None
PRODUCTION	Tail		8510	2038 2	2425	1.27	14.2	3079	15	50/50/2 Poz/G/gel	Additives

**Operator Name:** RIDGE RUNNER RESOURCES OPERATING LLC

**Well Name:** WARRIOR FED COM 2734 B

**Well Number:** 3H

## 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 additives (e. g., barite, bentonite, LCM) to maintain mud quality and satisfy lost circulation and weight increase needs will be on site at all times. Mud program may change due to hole conditions.

**Describe the mud monitoring system utilized:** An electronic pit volume totalizer will monitor volume, flow rate, pump pressure, and stroke rate.

## 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
9010	2038 2	OIL-BASED MUD	10	10							
0	450	OTHER : Fresh water spud	8.4	9							
450	9010	OTHER : Brine water	10	10							

## Section 6 - Test, Logging, Coring

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

None

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

OTH

**Other log type(s):**

None

**Coring operation description for the well:**

No core, drill stem test, or log is planned.



**Operator Name:** RIDGE RUNNER RESOURCES OPERATING LLC

**Well Name:** WARRIOR FED COM 2734 B

**Well Number:** 3H

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6930

**Anticipated Surface Pressure:** 4873

**Anticipated Bottom Hole Temperature(F):** 158

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

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Warrior\_2734\_3H\_H2S\_Plan\_20190215100256.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Warrior\_2734\_3H\_Horizontal\_Drill\_Plan\_20190215100322.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

Warrior\_2734\_3H\_Drill\_Plan\_20190215100339.pdf

Warrior\_2734\_3H\_Speedhead\_Specs\_20190215100347.pdf

Warrior\_2734B\_3H\_Co\_Flex\_Certs\_20191216112648.pdf

**Other Variance attachment:**



MECHANICAL PROPERTIES	Pipe	USS-CDC®	
Minimum Yield Strength	110,000	--	psi
Maximum Yield Strength	140,000	--	psi
Minimum Tensile Strength	125,000	--	psi
DIMENSIONS	Pipe	USS-CDC®	
Outside Diameter	5.500	6.050	in.
Wall Thickness	0.361	--	in.
Inside Diameter	4.778	4.778	in.
Standard Drift	4.653	4.653	in.
Alternate Drift	--	--	in.
Coupling Length	--	9.250	in.
Nominal Linear Weight, T&C	20.00	--	lbs/ft
Plain End Weight	19.83	--	lbs/ft
SECTION AREA	Pipe	USS-CDC®	
Critical Area	5.828	5.828	sq. in.
Joint Efficiency	--	100.0	%
PERFORMANCE	Pipe	USS-CDC®	
Minimum Collapse Pressure	11,100	11,100	psi
External Pressure Leak Resistance	--	8,880	psi
Minimum Internal Yield Pressure	12,640	12,370	psi
Minimum Pipe Body Yield Strength	641,000	--	lbs
Joint Strength	--	667,000	lbs
Compression Rating	--	400,000	lbs
Reference Length	--	22,233	ft
Maximum Uniaxial Bend Rating	--	57.2	deg/100 ft
MAKE-UP DATA	Pipe	USS-CDC®	
Make-Up Loss	--	4.63	in.
Minimum Make-Up Torque	--	10,500	ft-lbs
Maximum Make-Up Torque	--	13,000	ft-lbs
Connection Yield Torque	--	16,100	ft-lbs

1. Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness and Specified Minimum Yield Strength (SMYS).
2. Uniaxial bending rating shown is structural only, and equal to compression efficiency.
3. Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
4. Reference length is calculated by joint strength divided by nominal threaded and coupled weight with 1.5 safety factor.
5. Connection external pressure leak resistance has been verified to 80% API pipe body collapse pressure following the guidelines of API 5C5 Call II.

#### Legal Notice

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MECHANICAL PROPERTIES	Pipe	USS-CDC®	
Minimum Yield Strength	110,000	--	psi
Maximum Yield Strength	140,000	--	psi
Minimum Tensile Strength	125,000	--	psi
DIMENSIONS	Pipe	USS-CDC®	
Outside Diameter	7.000	7.656	in.
Wall Thickness	0.362	--	in.
Inside Diameter	6.276	6.276	in.
Standard Drift	6.151	6.151	in.
Alternate Drift	--	--	in.
Coupling Length	--	10.000	in.
Nominal Linear Weight, T&C	26.00	--	lbs/ft
Plain End Weight	25.69	--	lbs/ft
SECTION AREA	Pipe	USS-CDC®	
Critical Area	7.549	7.549	sq. in.
Joint Efficiency	--	100.0	%
PERFORMANCE	Pipe	USS-CDC®	
Minimum Collapse Pressure	7,540	7,540	psi
External Pressure Leak Resistance	--	6,030	psi
Minimum Internal Yield Pressure	9,960	9,960	psi
Minimum Pipe Body Yield Strength	830,000	--	lbs
Joint Strength	--	853,000	lbs
Compression Rating	--	512,000	lbs
Reference Length	--	21,872	ft
Maximum Uniaxial Bend Rating	--	44.4	deg/100 ft
MAKE-UP DATA	Pipe	USS-CDC®	
Make-Up Loss	--	5.00	in.
Minimum Make-Up Torque	--	14,000	ft-lbs
Maximum Make-Up Torque	--	17,500	ft-lbs
Connection Yield Torque	--	21,800	ft-lbs

1. Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness and Specified Minimum Yield Strength (SMYS).
2. Uniaxial bending rating shown is structural only, and equal to compression efficiency.
3. Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
4. Reference length is calculated by joint strength divided by nominal threaded and coupled weight with 1.5 safety factor.
5. Connection external pressure leak resistance has been verified to 80% API pipe body collapse pressure following the guidelines of API 5C5 Call II.

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kelvin fisher	2/4/19																																		
Surface	Top	0	450	450	13 3/8	54.5	54.5	Wt for Cals	47	47.0	Grade Conn	J55 ST&C	MW	9.0	210.6	Collapse Force	1,130	Collapse Rating	5.37	Coll SF	MW	9.0	210.6	Burst Force	2,730	Burst Rating	12.96	Burst SF	BLW BOP Pressure						



kelvin fisher	2/4/19																												
	<div><div>Collapse</div><div>Burst</div><div>Tension</div></div>																												
	Surface	Top	0	450	450	13 3/8	54.5	54.5	Wt for Cals	47	47.0	Grade Conn	J55 ST&C	MW	9.0	210.6	Collapse Force	1,130	Collapse Rating	5.37	MW	9.0	210.6	Burst Force	2,730	Burst Rating	12.96	Coll SF	2,633
		Int 1	0	9,010	8,777	9 5/8	47	47.0	L80HC BT&C	10.0	4564.0	5,740	1,258	10.0	4564.0	6,870	1.51	2,805	10.0	0.862	24,525	21,152	514,000	20.96	2.72	3.21	853,000	34.78	40.33
			Prod	0	9,010	8,777	7	26	26.0	P110 USS-COC	10.0	4564.0	6,230	1.37	10.0	4564.0	9,960	2.18	2,805	10.0	0.847	228,202	239,662	853,000	3.56	4.20	830,000	3.64	4.09
Prod	9,010	20,382	9,350	5 1/2	20	20.0	P110 USS-COC	10.0	4862.0	11,100	2.28	10.0	4862.0	9,960	2.05	2,805	10.0	0.847	11,460	9,709	667,000	58.20	68.70	641,000	55.93	66.02			

kelvin fisher	2/4/19																																				
	Surface	Top	0	450	450	13 3/8	54.5	54.5	Wt for Cals	47	47.0	Grade Conn	J55 ST&C	MW	9.0	210.6	Collapse Force	1,130	Collapse Rating	5.37	MW	9.0	210.6	Burst Force	2,730	Burst Rating	12.96	Burst SF	2,633	BLW BOP Pressure	2,805						
															9.0	210.6	4564.0	5,740	6,230	1,130	9.0	210.6	4564.0	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960						
															10.0	4564.0	5,740	5,740	6,230	1,130	10.0	4564.0	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870						
															10.0	4564.0	5,740	5,740	6,230	1,130	10.0	4564.0	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870					
	Int 1	0	9,010	8,777	9 5/8	47	47.0					L80HC BT&C	10.0	4564.0	5,740	5,740	6,230	1,130	10.0	4564.0	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870					
	Prod	0	9,010	8,777	7	26	26.0					P110 USS-COC	10.0	4564.0	5,740	5,740	6,230	1,130	10.0	4564.0	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870				
	Prod	9,010	20,382	9,350	5 1/2	20	20.0					P110 USS-COC	10.0	4862.0	11,100	11,100	11,100	11,100	2.28	10.0	4862.0	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960			

kelvin fisher	2/4/19																																				
	Surface	Top	0	450	450	13 3/8	54.5	54.5	Wt for Cals	47	47.0	Grade Conn	J55 ST&C	MW	9.0	210.6	Collapse Force	1,130	Collapse Rating	5.37	MW	9.0	210.6	Burst Force	2,730	Burst Rating	12.96	Burst SF	2,633	BLW BOP Pressure	2,805						
															9.0	210.6	4564.0	5,740	6,230	1,130	9.0	210.6	4564.0	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960						
															10.0	4564.0	5,740	5,740	6,230	1,130	10.0	4564.0	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870						
															10.0	4564.0	5,740	5,740	6,230	1,130	10.0	4564.0	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870					
	Int 1	0	9,010	8,777	9 5/8	47	47.0					L80HC BT&C	10.0	4564.0	5,740	5,740	6,230	1,130	10.0	4564.0	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870					
	Prod	0	9,010	8,777	7	26	26.0					P110 USS-COC	10.0	4564.0	5,740	5,740	6,230	1,130	10.0	4564.0	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870	6,870				
	Prod	9,010	20,382	9,350	5 1/2	20	20.0					P110 USS-COC	10.0	4862.0	11,100	11,100	11,100	11,100	2.28	10.0	4862.0	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960	9,960			



Ridge Runner Resources Operating, LLC  
Gladiator Fed Com 3502  
SHL 35-22s-28e Eddy County, NM  
H<sub>2</sub>S Drilling Operations Plan

- a. All personnel will be trained in H<sub>2</sub>S working conditions as required by Onshore Order 6 before drilling out of the surface casing.
- b. Two briefing areas will be established. Each will be at least 150' from the wellhead, perpendicular from one another, and easily entered and exited. See H<sub>2</sub>S page 5 for more details.
- c. H<sub>2</sub>S Safety Equipment/Systems:
  - i. Well Control Equipment
    - Flare line will be  $\geq 150'$  from the wellhead and ignited by a pilot light.
    - Beware of SO<sub>2</sub> created by flaring.
    - Choke manifold will include a remotely operated choke.
    - Mud gas separator
  - ii. Protective Equipment for Essential Personnel
    - Every person on site will be required to wear a personal H<sub>2</sub>S and SO<sub>2</sub> monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the chest.
    - One self-contained breathing apparatus (SCBA) 30-minute rescue pack will be at each briefing area. Two 30-minute SCBA packs will be stored in the safety trailer.
    - Four work/escape packs will be on the rig floor. Each pack will have a long enough hose to allow unimpaired work activity.
    - Four emergency escape packs will be in the doghouse for emergency evacuation.
    - Hand signals will be used when wearing protective breathing apparatus.
    - Stokes litter or stretcher
    - Two full OSHA compliant body harnesses
    - A 100-foot long x 5/8" OSHA compliant rope
    - One 20-pound ABC fire extinguisher



iii. H<sub>2</sub>S Detection & Monitoring Equipment

- Every person on site will be required to wear a personal H<sub>2</sub>S and SO<sub>2</sub> monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the chest.
- A stationary detector with three sensors will be in the doghouse.
- Sensors will be installed on the rig floor, bell nipple, and at the end of the flow line or where drilling fluids are discharged.
- Visual alarm will be triggered at 10 ppm.
- Audible alarm will be triggered at 10 ppm.
- Calibration will occur at least every 30 days. Gas sample tubes will be kept in the safety trailer.

iv. Visual Warning System

- Color-coded H<sub>2</sub>S condition sign will be set at the entrance to the pad.
- Color-coded condition flag will be installed to indicate current H<sub>2</sub>S conditions.
- Two wind socks will be installed that will be visible from all sides.

v. Mud Program

- A water based mud with a pH of  $\geq 10$  will be maintained to control corrosion, H<sub>2</sub>S gas returns to the surface, and minimize sulfide stress cracking and embrittlement.
- Drilling mud containing H<sub>2</sub>S gas will be degassed at an optimum location for the rig configuration.
- This gas will be piped into the flare system.
- Enough mud additives will be on location to scavenge and/or neutralize H<sub>2</sub>S where formation pressures are unknown.

vi. Metallurgy

- All equipment that has the potential to be exposed to H<sub>2</sub>S will be suitable for H<sub>2</sub>S service.
- Equipment that will meet these metallurgical standards include the drill string, casing, wellhead, BOP assembly, casing head and spool, rotating head, kill lines, choke, choke manifold and lines, valves, mud-gas separators, DST tools, test units, tubing, flanges, and other related equipment (elastomer packings and seals).



- vii. Communication from well site
  - Cell phones and/or two-way radios will be used to communicate from the well site.
  
- d. A remote-controlled choke, mud-gas separator, and a rotating head will be installed before drilling or testing any formation expected to contain H<sub>2</sub>S.

Company Personnel to be Notified

Ridge Runner's Midland, TX Office	Office: (432) 684-7877
	In emergency, push #
Kelvin Fisher, Chief Operating Officer	Office: (432) 684-7877
	Mobile: (432) 634-5621
Gary Moreau, Production Foreman	(575) 631-5643

Local & County Agencies

Loving Fire Department	911 or (575) 745-3600
Eddy County Sheriff (Carlsbad)	911 (575) 887-7551
Eddy County Emergency Management (Carlsbad)	(575) 887-9511
Carlsbad Medical Center Hospital	(575) 887-4100
Eddy County South Road Department (Carlsbad)	(575) 885-4835



### State Agencies

NM State Police (Carlsbad)	(575) 885-3138
NM Oil Conservation (Artesia)	(575) 748-1283
NM Oil Conservation (Santa Fe)	(505) 476-3440
NM Dept. of Transportation (Roswell)	(575) 637-7201

### Federal Agencies

BLM Carlsbad Field Office	(575) 234-5972
National Response Center	(800) 424-8802
US EPA Region 6 (Dallas)	(800) 887-6063
	(214) 665-6444

### Residents within 1 mile

none

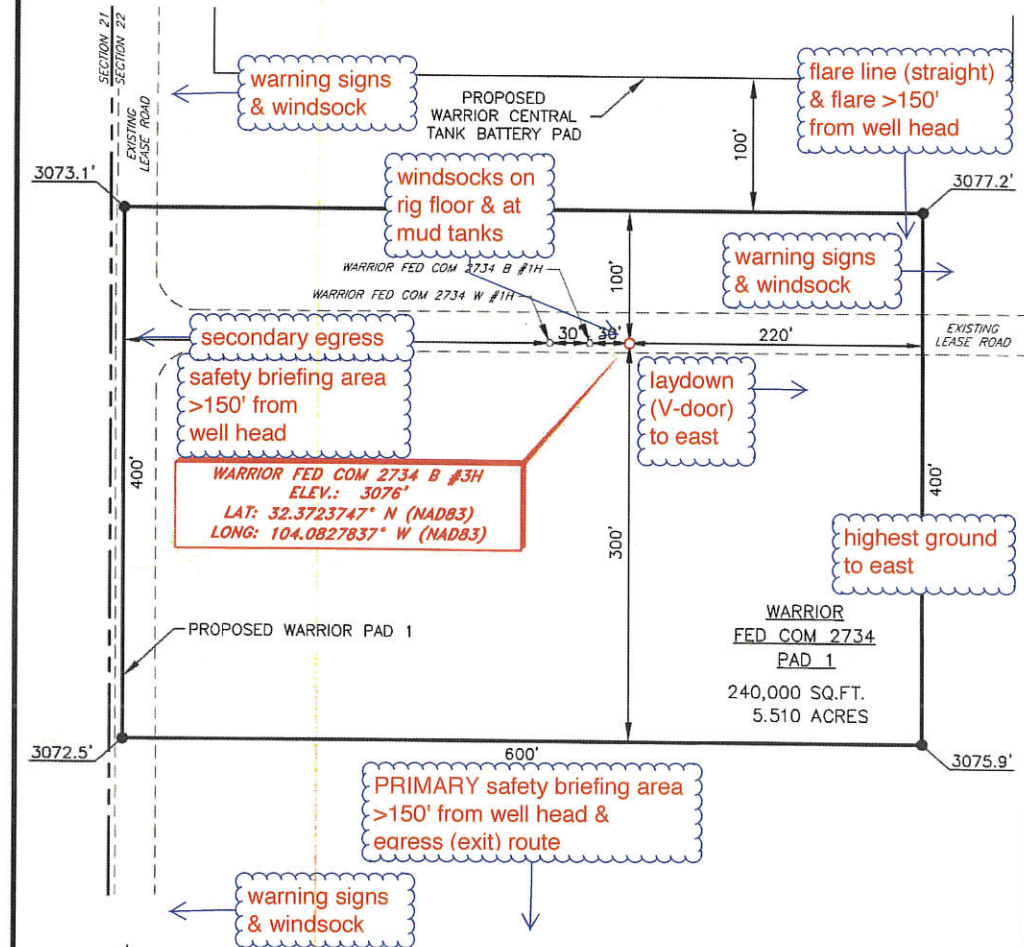
### Air Evacuation

Med Flight Air Ambulance (Albuquerque)	(800) 842-4431
Lifeguard (Albuquerque)	(888) 866-7256

### Veterinarians

Desert Willow Veterinary Services (Carlsbad)	(575) 885-3399
Animal Care Center (Carlsbad)	(575) 885-5352

RIDGE RUNNER RESOURCES OPERATING, LLC.  
 WARRIOR FED COM 2734 B #3H  
 (500' FSL & 390' FWL)  
 SECTION 22, T22S, R28E  
 N. M. P. M., EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of State Highway 31 (Potash Mines Rd.) and CR-605 (Refinery Rd.),  
 Go Northwest on CR-605 approx. 4.2 miles to lease road on the right;  
 Turn right and go North approx. 0.8 miles to proposed location on the right.

THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS AND PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY, BOUNDARY DATA IS SHOWN FROM A PREVIOUS SURVEY REFERENCED HEREON.

I, Jeffrey L. Fansler, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

*Jeffrey L. Fansler*  
 Jeffrey L. Fansler NM PS 10034



Prevailing Wind  
 Out of the South

SCALE: 1" = 100'

0 50' 100'

BEARINGS ARE GRID NAD 83  
 NM EAST  
 DISTANCES ARE HORIZ. GROUND.

DATE: 12-11-2018		
NO.	REVISION	DATE
1		
2		
3		
4		

**RRC**  
 SURVEYING, LLC

701 S. CECIL ST., HOBBS, NM 88240 (575) 964-8200

Copyright 2018 - All Rights Reserved

SCALE: 1" = 100'
SURVEYED BY: AB/RU
DRAWN BY: CAR
APPROVED BY: JLF
JOB NO.: LS18111310
SHEET: B 3H PAD



# Ridge Runner Resources Operating, LLC

Warrior Fed Com 2734 W  
H2S Contingency Plan:  
2 Mile Radius Map

Township 22S, Range 28E  
Eddy County, New Mexico



Pad Location

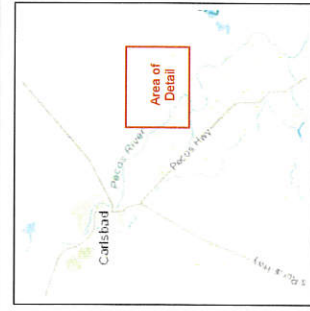
1:27,000



NAD 1983 New Mexico State Plane East  
FIPS 3001 Feet



Prepared by Permits West, Inc., January 4, 2019  
for Ridge Runner Resources Operating, LLC







Project: Eddy County, NM (NAD83)  
Site: Warrior Fed Com  
Well: Warrior Fed Com 2734B 3H  
Depth Reference: GL 3076' + 30' KB @ 3106.00usft (Rig TBD)  
SHL Northing: 499292.10  
SHL Easting: 618689.50  
Rig: Rig TBD  
Plan: plan1



#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6866.69	0.00	0.00	6866.69	0.00	0.00	0.00	0.00	0.00	Start Build 5.00
7466.69	30.00	91.00	7439.65	-2.68	153.50	5.00	91.00	21.23	Start 1640.00 hold at 7466.69 MD
9106.69	30.00	91.00	8859.93	-16.99	973.38	0.00	0.00	134.64	Start DLS 10.00 TFO 88.77
9999.58	90.00	179.58	9350.00	-587.80	1260.45	10.00	88.77	735.99	Start 10381.98 hold at 9999.58 MD
20381.56	90.00	179.58	9350.00	-10969.50	1337.10	0.00	0.00	11050.69	TD @ 20381.56' MD

#### FORMATION TOP DETAILS

No formation data is available

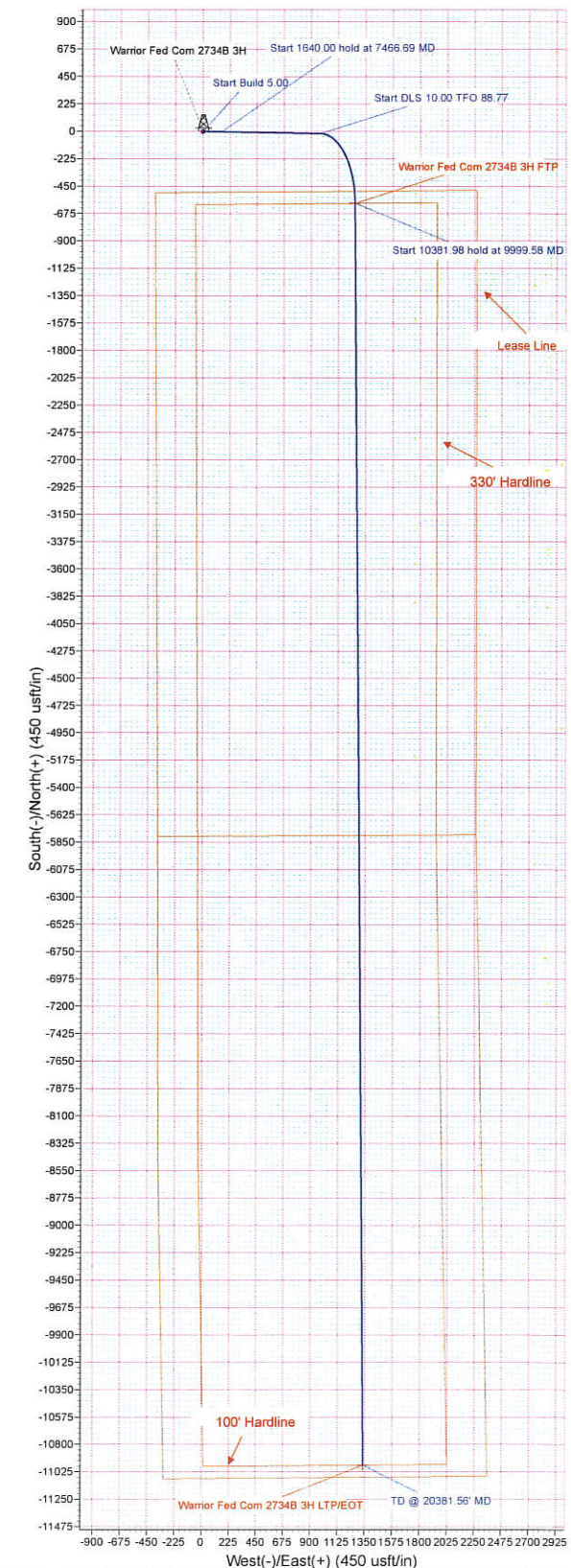
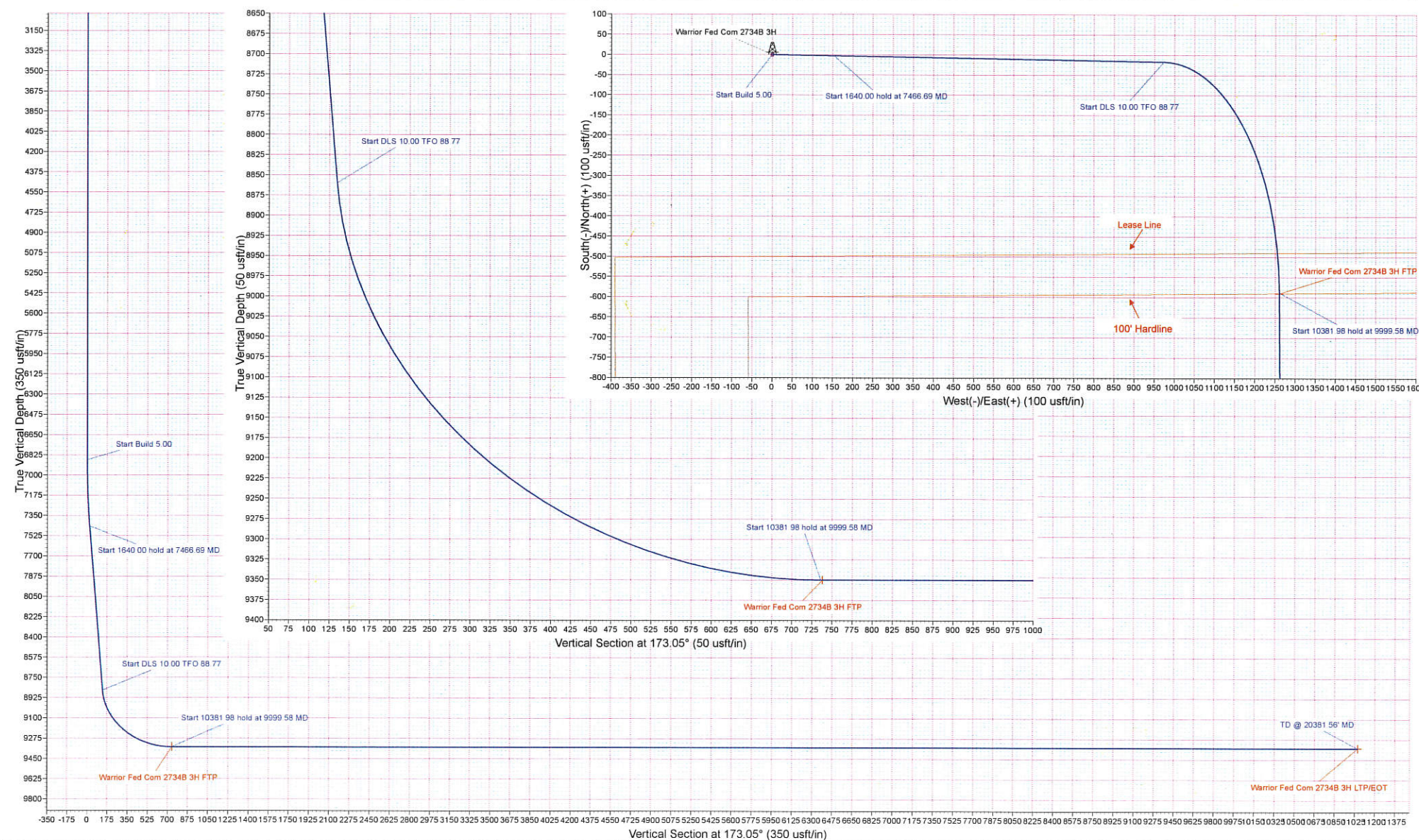
#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Easting	Northing
Warrior Fed Com 2734B 3H FTP	9350.00	-589.90	1260.40	498702.20	619949.90
Warrior Fed Com 2734B 3H LTP/EOT	9350.00	-10969.50	1337.10	488322.60	620026.60



Azimuths to Grid North  
True North: -0.13°  
Magnetic North: 7.10°

Magnetic Field  
Strength: 47956.9nT  
Dip Angle: 60.12°  
Date: 02/01/2019  
Model: HDGM





<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Warrior Fed Com 2734B 3H
<b>Company:</b>	Ridge Runner Resources	<b>TVD Reference:</b>	GL 3076' + 30' KB @ 3106.00usft (Rig TBD)
<b>Project:</b>	Eddy County, NM (NAD83)	<b>MD Reference:</b>	GL 3076' + 30' KB @ 3106.00usft (Rig TBD)
<b>Site:</b>	Warrior Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	Warrior Fed Com 2734B 3H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	plan1		

<b>Project</b>	Eddy County, NM (NAD83)	<b>System Datum:</b>	Mean Sea Level
<b>Map System:</b>	US State Plane 1983		
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Warrior Fed Com				
<b>Site Position:</b>		<b>Northing:</b>	499,291.60 usft	<b>Latitude:</b>	32° 22' 20.545 N
<b>From:</b>	Map	<b>Easting:</b>	618,629.50 usft	<b>Longitude:</b>	104° 4' 58.721 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.13 °

Well	Warrior Fed Com 2734B 3H					
Well Position	+N/-S	0.50 usft	Northing:	499,292.10 usft	Latitude:	32° 22' 20.549 N
	+E/-W	60.00 usft	Easting:	618,689.50 usft	Longitude:	104° 4' 58.021 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	Ground Level: 3,076.00 usft		

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	02/01/19	7.23	60.12	47,956.90000000

<b>Design</b>	plan1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	173.05	

<b>Plan Survey Tool Program</b>	<b>Date</b>	02/01/19			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	20,381.56 plan1 (Wellbore #1)	MWD		
			MWD - Standard		

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,866.69	0.00	0.00	6,866.69	0.00	0.00	0.00	0.00	0.00	0.00	
7,466.69	30.00	91.00	7,439.65	-2.68	153.50	5.00	5.00	0.00	91.00	
9,106.69	30.00	91.00	8,859.93	-16.99	973.38	0.00	0.00	0.00	0.00	
9,999.58	90.00	179.58	9,350.00	-587.80	1,260.45	10.00	6.72	9.92	88.77	
20,381.56	90.00	179.58	9,350.00	-10,969.50	1,337.10	0.00	0.00	0.00	0.00	

**Database:** EDM 5000.14 Single User Db  
**Company:** Ridge Runner Resources  
**Project:** Eddy County, NM (NAD83)  
**Site:** Warrior Fed Com  
**Well:** Warrior Fed Com 2734B 3H  
**Wellbore:** Wellbore #1  
**Design:** plan1

**Local Co-ordinate Reference:** Well Warrior Fed Com 2734B 3H  
**TVD Reference:** GL 3076' + 30' KB @ 3106.00usft (Rig TBD)  
**MD Reference:** GL 3076' + 30' KB @ 3106.00usft (Rig TBD)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



**Database:** EDM 5000.14 Single User Db  
**Company:** Ridge Runner Resources  
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**Site:** Warrior Fed Com  
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**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,866.69	0.00	0.00	6,866.69	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 5.00</b>									
6,900.00	1.67	91.00	6,900.00	-0.01	0.48	0.07	5.00	5.00	0.00
7,000.00	6.67	91.00	6,999.70	-0.14	7.74	1.07	5.00	5.00	0.00
7,100.00	11.67	91.00	7,098.39	-0.41	23.67	3.27	5.00	5.00	0.00
7,200.00	16.67	91.00	7,195.32	-0.84	48.13	6.66	5.00	5.00	0.00
7,300.00	21.67	91.00	7,289.75	-1.41	80.94	11.20	5.00	5.00	0.00
7,400.00	26.67	91.00	7,380.96	-2.13	121.86	16.86	5.00	5.00	0.00
7,466.69	30.00	91.00	7,439.65	-2.68	153.50	21.23	5.00	5.00	0.00
<b>Start 1640.00 hold at 7466.69 MD</b>									
7,500.00	30.00	91.00	7,468.50	-2.97	170.15	23.54	0.00	0.00	0.00
7,600.00	30.00	91.00	7,555.10	-3.84	220.15	30.45	0.00	0.00	0.00
7,700.00	30.00	91.00	7,641.70	-4.72	270.14	37.37	0.00	0.00	0.00
7,800.00	30.00	91.00	7,728.30	-5.59	320.13	44.28	0.00	0.00	0.00
7,900.00	30.00	91.00	7,814.91	-6.46	370.12	51.20	0.00	0.00	0.00
8,000.00	30.00	91.00	7,901.51	-7.33	420.11	58.11	0.00	0.00	0.00
8,100.00	30.00	91.00	7,988.11	-8.21	470.11	65.03	0.00	0.00	0.00
8,200.00	30.00	91.00	8,074.71	-9.08	520.10	71.94	0.00	0.00	0.00
8,300.00	30.00	91.00	8,161.32	-9.95	570.09	78.86	0.00	0.00	0.00
8,400.00	30.00	91.00	8,247.92	-10.82	620.08	85.77	0.00	0.00	0.00
8,500.00	30.00	91.00	8,334.52	-11.70	670.08	92.69	0.00	0.00	0.00
8,600.00	30.00	91.00	8,421.12	-12.57	720.07	99.60	0.00	0.00	0.00
8,700.00	30.00	91.00	8,507.73	-13.44	770.06	106.52	0.00	0.00	0.00
8,800.00	30.00	91.00	8,594.33	-14.31	820.05	113.43	0.00	0.00	0.00
8,900.00	30.00	91.00	8,680.93	-15.19	870.05	120.35	0.00	0.00	0.00
9,000.00	30.00	91.00	8,767.53	-16.06	920.04	127.26	0.00	0.00	0.00
9,100.00	30.00	91.00	8,854.14	-16.93	970.03	134.18	0.00	0.00	0.00
9,106.69	30.00	91.00	8,859.93	-16.99	973.38	134.64	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 88.77</b>									
9,200.00	31.48	109.08	8,940.30	-25.38	1,019.83	148.59	10.00	1.59	19.38
9,300.00	35.55	125.70	9,023.84	-50.95	1,068.23	179.82	10.00	4.07	16.61
9,400.00	41.43	138.74	9,102.20	-92.89	1,113.77	226.97	10.00	5.89	13.04
9,500.00	48.47	148.83	9,173.02	-149.93	1,155.07	288.59	10.00	7.03	10.09
9,600.00	56.21	156.85	9,234.14	-220.34	1,190.87	362.81	10.00	7.74	8.02
9,700.00	64.37	163.50	9,283.70	-301.98	1,220.08	447.39	10.00	8.17	6.65
9,800.00	72.81	169.29	9,320.20	-392.37	1,241.81	539.74	10.00	8.43	5.78
9,900.00	81.39	174.56	9,342.53	-488.76	1,255.41	637.07	10.00	8.58	5.27
9,999.58	90.00	179.58	9,350.00	-587.80	1,260.45	735.99	10.00	8.65	5.04



**Database:** EDM 5000.14 Single User Db  
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**Well:** Warrior Fed Com 2734B 3H  
**Wellbore:** Wellbore #1  
**Design:** plan1

**Local Co-ordinate Reference:** Well Warrior Fed Com 2734B 3H  
**TVD Reference:** GL 3076' + 30' KB @ 3106.00usft (Rig TBD)  
**MD Reference:** GL 3076' + 30' KB @ 3106.00usft (Rig TBD)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>Start 10381.98 hold at 9999.58 MD</b>									
10,000.00	90.00	179.58	9,350.00	-588.22	1,260.46	736.41	0.00	0.00	0.00
10,001.68	90.00	179.58	9,350.00	-589.90	1,260.47	738.08	0.00	0.00	0.00
<b>Warrior Fed Com 2734B 3H FTP</b>									
10,100.00	90.00	179.58	9,350.00	-688.22	1,261.20	835.77	0.00	0.00	0.00
10,200.00	90.00	179.58	9,350.00	-788.22	1,261.93	935.12	0.00	0.00	0.00
10,300.00	90.00	179.58	9,350.00	-888.22	1,262.67	1,034.47	0.00	0.00	0.00
10,400.00	90.00	179.58	9,350.00	-988.21	1,263.41	1,133.82	0.00	0.00	0.00
10,500.00	90.00	179.58	9,350.00	-1,088.21	1,264.15	1,233.17	0.00	0.00	0.00
10,600.00	90.00	179.58	9,350.00	-1,188.21	1,264.89	1,332.53	0.00	0.00	0.00
10,700.00	90.00	179.58	9,350.00	-1,288.21	1,265.62	1,431.88	0.00	0.00	0.00
10,800.00	90.00	179.58	9,350.00	-1,388.20	1,266.36	1,531.23	0.00	0.00	0.00
10,900.00	90.00	179.58	9,350.00	-1,488.20	1,267.10	1,630.58	0.00	0.00	0.00
11,000.00	90.00	179.58	9,350.00	-1,588.20	1,267.84	1,729.93	0.00	0.00	0.00
11,100.00	90.00	179.58	9,350.00	-1,688.19	1,268.58	1,829.29	0.00	0.00	0.00
11,200.00	90.00	179.58	9,350.00	-1,788.19	1,269.32	1,928.64	0.00	0.00	0.00
11,300.00	90.00	179.58	9,350.00	-1,888.19	1,270.05	2,027.99	0.00	0.00	0.00
11,400.00	90.00	179.58	9,350.00	-1,988.19	1,270.79	2,127.34	0.00	0.00	0.00
11,500.00	90.00	179.58	9,350.00	-2,088.18	1,271.53	2,226.69	0.00	0.00	0.00
11,600.00	90.00	179.58	9,350.00	-2,188.18	1,272.27	2,326.04	0.00	0.00	0.00
11,700.00	90.00	179.58	9,350.00	-2,288.18	1,273.01	2,425.40	0.00	0.00	0.00
11,800.00	90.00	179.58	9,350.00	-2,388.18	1,273.75	2,524.75	0.00	0.00	0.00
11,900.00	90.00	179.58	9,350.00	-2,488.17	1,274.48	2,624.10	0.00	0.00	0.00
12,000.00	90.00	179.58	9,350.00	-2,588.17	1,275.22	2,723.45	0.00	0.00	0.00
12,100.00	90.00	179.58	9,350.00	-2,688.17	1,275.96	2,822.80	0.00	0.00	0.00
12,200.00	90.00	179.58	9,350.00	-2,788.16	1,276.70	2,922.16	0.00	0.00	0.00
12,300.00	90.00	179.58	9,350.00	-2,888.16	1,277.44	3,021.51	0.00	0.00	0.00
12,400.00	90.00	179.58	9,350.00	-2,988.16	1,278.18	3,120.86	0.00	0.00	0.00
12,500.00	90.00	179.58	9,350.00	-3,088.16	1,278.91	3,220.21	0.00	0.00	0.00
12,600.00	90.00	179.58	9,350.00	-3,188.15	1,279.65	3,319.56	0.00	0.00	0.00
12,700.00	90.00	179.58	9,350.00	-3,288.15	1,280.39	3,418.92	0.00	0.00	0.00
12,800.00	90.00	179.58	9,350.00	-3,388.15	1,281.13	3,518.27	0.00	0.00	0.00
12,900.00	90.00	179.58	9,350.00	-3,488.15	1,281.87	3,617.62	0.00	0.00	0.00
13,000.00	90.00	179.58	9,350.00	-3,588.14	1,282.60	3,716.97	0.00	0.00	0.00
13,100.00	90.00	179.58	9,350.00	-3,688.14	1,283.34	3,816.32	0.00	0.00	0.00
13,200.00	90.00	179.58	9,350.00	-3,788.14	1,284.08	3,915.68	0.00	0.00	0.00
13,300.00	90.00	179.58	9,350.00	-3,888.13	1,284.82	4,015.03	0.00	0.00	0.00
13,400.00	90.00	179.58	9,350.00	-3,988.13	1,285.56	4,114.38	0.00	0.00	0.00
13,500.00	90.00	179.58	9,350.00	-4,088.13	1,286.30	4,213.73	0.00	0.00	0.00
13,600.00	90.00	179.58	9,350.00	-4,188.13	1,287.03	4,313.08	0.00	0.00	0.00
13,700.00	90.00	179.58	9,350.00	-4,288.12	1,287.77	4,412.43	0.00	0.00	0.00
13,800.00	90.00	179.58	9,350.00	-4,388.12	1,288.51	4,511.79	0.00	0.00	0.00
13,900.00	90.00	179.58	9,350.00	-4,488.12	1,289.25	4,611.14	0.00	0.00	0.00
14,000.00	90.00	179.58	9,350.00	-4,588.12	1,289.99	4,710.49	0.00	0.00	0.00
14,100.00	90.00	179.58	9,350.00	-4,688.11	1,290.73	4,809.84	0.00	0.00	0.00
14,200.00	90.00	179.58	9,350.00	-4,788.11	1,291.46	4,909.19	0.00	0.00	0.00
14,300.00	90.00	179.58	9,350.00	-4,888.11	1,292.20	5,008.55	0.00	0.00	0.00
14,400.00	90.00	179.58	9,350.00	-4,988.10	1,292.94	5,107.90	0.00	0.00	0.00
14,500.00	90.00	179.58	9,350.00	-5,088.10	1,293.68	5,207.25	0.00	0.00	0.00
14,600.00	90.00	179.58	9,350.00	-5,188.10	1,294.42	5,306.60	0.00	0.00	0.00
14,700.00	90.00	179.58	9,350.00	-5,288.10	1,295.16	5,405.95	0.00	0.00	0.00
14,800.00	90.00	179.58	9,350.00	-5,388.09	1,295.89	5,505.31	0.00	0.00	0.00
14,900.00	90.00	179.58	9,350.00	-5,488.09	1,296.63	5,604.66	0.00	0.00	0.00



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**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,000.00	90.00	179.58	9,350.00	-5,588.09	1,297.37	5,704.01	0.00	0.00	0.00
15,100.00	90.00	179.58	9,350.00	-5,688.09	1,298.11	5,803.36	0.00	0.00	0.00
15,200.00	90.00	179.58	9,350.00	-5,788.08	1,298.85	5,902.71	0.00	0.00	0.00
15,300.00	90.00	179.58	9,350.00	-5,888.08	1,299.58	6,002.07	0.00	0.00	0.00
15,400.00	90.00	179.58	9,350.00	-5,988.08	1,300.32	6,101.42	0.00	0.00	0.00
15,500.00	90.00	179.58	9,350.00	-6,088.07	1,301.06	6,200.77	0.00	0.00	0.00
15,600.00	90.00	179.58	9,350.00	-6,188.07	1,301.80	6,300.12	0.00	0.00	0.00
15,700.00	90.00	179.58	9,350.00	-6,288.07	1,302.54	6,399.47	0.00	0.00	0.00
15,800.00	90.00	179.58	9,350.00	-6,388.07	1,303.28	6,498.83	0.00	0.00	0.00
15,900.00	90.00	179.58	9,350.00	-6,488.06	1,304.01	6,598.18	0.00	0.00	0.00
16,000.00	90.00	179.58	9,350.00	-6,588.06	1,304.75	6,697.53	0.00	0.00	0.00
16,100.00	90.00	179.58	9,350.00	-6,688.06	1,305.49	6,796.88	0.00	0.00	0.00
16,200.00	90.00	179.58	9,350.00	-6,788.06	1,306.23	6,896.23	0.00	0.00	0.00
16,300.00	90.00	179.58	9,350.00	-6,888.05	1,306.97	6,995.58	0.00	0.00	0.00
16,400.00	90.00	179.58	9,350.00	-6,988.05	1,307.71	7,094.94	0.00	0.00	0.00
16,500.00	90.00	179.58	9,350.00	-7,088.05	1,308.44	7,194.29	0.00	0.00	0.00
16,600.00	90.00	179.58	9,350.00	-7,188.04	1,309.18	7,293.64	0.00	0.00	0.00
16,700.00	90.00	179.58	9,350.00	-7,288.04	1,309.92	7,392.99	0.00	0.00	0.00
16,800.00	90.00	179.58	9,350.00	-7,388.04	1,310.66	7,492.34	0.00	0.00	0.00
16,900.00	90.00	179.58	9,350.00	-7,488.04	1,311.40	7,591.70	0.00	0.00	0.00
17,000.00	90.00	179.58	9,350.00	-7,588.03	1,312.14	7,691.05	0.00	0.00	0.00
17,100.00	90.00	179.58	9,350.00	-7,688.03	1,312.87	7,790.40	0.00	0.00	0.00
17,200.00	90.00	179.58	9,350.00	-7,788.03	1,313.61	7,889.75	0.00	0.00	0.00
17,300.00	90.00	179.58	9,350.00	-7,888.03	1,314.35	7,989.10	0.00	0.00	0.00
17,400.00	90.00	179.58	9,350.00	-7,988.02	1,315.09	8,088.46	0.00	0.00	0.00
17,500.00	90.00	179.58	9,350.00	-8,088.02	1,315.83	8,187.81	0.00	0.00	0.00
17,600.00	90.00	179.58	9,350.00	-8,188.02	1,316.56	8,287.16	0.00	0.00	0.00
17,700.00	90.00	179.58	9,350.00	-8,288.01	1,317.30	8,386.51	0.00	0.00	0.00
17,800.00	90.00	179.58	9,350.00	-8,388.01	1,318.04	8,485.86	0.00	0.00	0.00
17,900.00	90.00	179.58	9,350.00	-8,488.01	1,318.78	8,585.22	0.00	0.00	0.00
18,000.00	90.00	179.58	9,350.00	-8,588.01	1,319.52	8,684.57	0.00	0.00	0.00
18,100.00	90.00	179.58	9,350.00	-8,688.00	1,320.26	8,783.92	0.00	0.00	0.00
18,200.00	90.00	179.58	9,350.00	-8,788.00	1,320.99	8,883.27	0.00	0.00	0.00
18,300.00	90.00	179.58	9,350.00	-8,888.00	1,321.73	8,982.62	0.00	0.00	0.00
18,400.00	90.00	179.58	9,350.00	-8,988.00	1,322.47	9,081.97	0.00	0.00	0.00
18,500.00	90.00	179.58	9,350.00	-9,087.99	1,323.21	9,181.33	0.00	0.00	0.00
18,600.00	90.00	179.58	9,350.00	-9,187.99	1,323.95	9,280.68	0.00	0.00	0.00
18,700.00	90.00	179.58	9,350.00	-9,287.99	1,324.69	9,380.03	0.00	0.00	0.00
18,800.00	90.00	179.58	9,350.00	-9,387.98	1,325.42	9,479.38	0.00	0.00	0.00
18,900.00	90.00	179.58	9,350.00	-9,487.98	1,326.16	9,578.73	0.00	0.00	0.00
19,000.00	90.00	179.58	9,350.00	-9,587.98	1,326.90	9,678.09	0.00	0.00	0.00
19,100.00	90.00	179.58	9,350.00	-9,687.98	1,327.64	9,777.44	0.00	0.00	0.00
19,200.00	90.00	179.58	9,350.00	-9,787.97	1,328.38	9,876.79	0.00	0.00	0.00
19,300.00	90.00	179.58	9,350.00	-9,887.97	1,329.12	9,976.14	0.00	0.00	0.00
19,400.00	90.00	179.58	9,350.00	-9,987.97	1,329.85	10,075.49	0.00	0.00	0.00
19,500.00	90.00	179.58	9,350.00	-10,087.97	1,330.59	10,174.85	0.00	0.00	0.00
19,600.00	90.00	179.58	9,350.00	-10,187.96	1,331.33	10,274.20	0.00	0.00	0.00
19,700.00	90.00	179.58	9,350.00	-10,287.96	1,332.07	10,373.55	0.00	0.00	0.00
19,800.00	90.00	179.58	9,350.00	-10,387.96	1,332.81	10,472.90	0.00	0.00	0.00
19,900.00	90.00	179.58	9,350.00	-10,487.95	1,333.54	10,572.25	0.00	0.00	0.00
20,000.00	90.00	179.58	9,350.00	-10,587.95	1,334.28	10,671.61	0.00	0.00	0.00
20,100.00	90.00	179.58	9,350.00	-10,687.95	1,335.02	10,770.96	0.00	0.00	0.00
20,200.00	90.00	179.58	9,350.00	-10,787.95	1,335.76	10,870.31	0.00	0.00	0.00
20,300.00	90.00	179.58	9,350.00	-10,887.94	1,336.50	10,969.66	0.00	0.00	0.00

**Database:** EDM 5000.14 Single User Db  
**Company:** Ridge Runner Resources  
**Project:** Eddy County, NM (NAD83)  
**Site:** Warrior Fed Com  
**Well:** Warrior Fed Com 2734B 3H  
**Wellbore:** Wellbore #1  
**Design:** plan1

**Local Co-ordinate Reference:** Well Warrior Fed Com 2734B 3H  
**TVD Reference:** GL 3076' + 30' KB @ 3106.00usft (Rig TBD)  
**MD Reference:** GL 3076' + 30' KB @ 3106.00usft (Rig TBD)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

**Planned Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,381.56	90.00	179.58	9,350.00	-10,969.50	1,337.10	11,050.69	0.00	0.00	0.00
TD @ 20381.56' MD - Warrior Fed Com 2734B 3H LTP/EOT									

**Design Targets**

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Warrior Fed Com 273	0.00	0.00	9,350.00	-589.90	1,260.40	498,702.20	619,949.90	32° 22' 14.682 N	104° 4' 43.340 W
- plan misses target center by 0.07usft at 10001.67usft MD (9350.00 TVD, -589.90 N, 1260.47 E)									
- Point									
Warrior Fed Com 273	0.00	0.00	9,350.00	-10,969.50	1,337.10	488,322.60	620,026.60	32° 20' 31.966 N	104° 4' 42.734 W
- plan hits target center									
- Point									

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
6,866.69	6,866.69	0.00	0.00	Start Build 5.00
7,466.69	7,439.65	-2.68	153.50	Start 1640.00 hold at 7466.69 MD
9,106.69	8,859.93	-16.99	973.38	Start DLS 10.00 TFO 88.77
9,999.58	9,350.00	-587.80	1,260.45	Start 10381.98 hold at 9999.58 MD
20,381.56	9,350.00	-10,969.50	1,337.10	TD @ 20381.56' MD



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DRILL PLAN PAGE 1

'fee/fee/Fed well'

## Drilling Program

### 1. ESTIMATED TOPS

Formation Name	TVD	MD	Bearing
Quaternary caliche	000'	000'	fresh water
Rustler anhydrite	250'	250'	brackish water
Top salt	480'	480'	N/A
Delaware limestone	2700'	2700'	N/A
Bell Canyon sandstone	2725'	2725'	hydrocarbons
Cherry Canyon sandstone	3830'	3830'	hydrocarbons
Brushy Canyon sandstone	4850'	4850'	hydrocarbons
Bone Spring limestone	6145'	6145'	hydrocarbons
1 <sup>st</sup> Bone Spring sandstone	7175'	7179'	hydrocarbons
2 <sup>nd</sup> Bone Spring sandstone	8000'	8114'	hydrocarbons
3 <sup>rd</sup> Bone Spring carbonate	8325'	8489'	hydrocarbons
(KOP	8860'	9107'	hydrocarbons)
3 <sup>rd</sup> Bone Spring sandstone	9200'	9544'	hydrocarbons
TD	9350'	20382'	hydrocarbons

### 2. NOTABLE ZONES

Third Bone Spring is the goal. Closest water well (C 00036) is 2.13 miles southwest. Depth to water was not reported in the 106' deep well.

### 3. PRESSURE CONTROL

A 5000 psi BOP system will be installed and tested to 3000 psi parameters before drilling the intermediate hole. Annular will be tested to 1500 psi. Double (pipe and blind) ram BOP will be tested to 3000 psi. This is based on:

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DRILL PLAN PAGE 2

'fee/fee/Fed well'

8777' TVD x 10 ppg mud x 0.052 = 4564 psi  
- 8777' x 0.22 psi/ft = 1931 psi  
2633 psi

The installed 5000 psi BOP system will be tested to 5000 psi parameters before drilling the production hole. Annular will be tested to 2500 psi. Double (pipe and blind) ram BOP will be tested to 5000 psi. Since a non-tapered drill string will be used, a double ram preventer is adequate. This is based on:

9350' TVD x 9.5 ppg mud x 0.052 = 4862 psi  
- 9350' x 0.22 psi/ft = 2057 psi  
2805 psi

BOPE will be tested by an independent service company to 250 psi low and the high pressures stated above as required by Onshore Order 2. The system may be upgraded to a higher pressure, but will still be tested to the pressures stated above.

Pipe rams will be functioned daily. Blind rams will be functioned on each trip when out of the hole. Annular will be functioned weekly. BOP will be tested on initial installation, whenever a seal is broken, following repairs, or every 30 days.

A variance is requested to use a 13.625" 5000 psi multi-bowl wellhead. When the BOP is initially installed after running the 13.375" (surface) casing, it will be tested to the 5M test pressure of the 8.5" interval. The 9.625" (intermediate) casing will be run with a mandrel hanger and without breaking any connections on the BOP. Thus, not requiring an additional BOP test.

Rig contract has not been let due to uncertainty regarding APD approval date. A typical 5M BOP stack and choke are attached. Rig specific diagrams will be provided via Sundry Notice once the rig contract is signed.

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DRILL PLAN PAGE 3

'fee/fee/Fed well'

Auxiliary equipment:

Top drive will have an IBOP in lieu of Kelly cocks. A floor safety valve (i. e., TIW valve) will be available when tripping.

In the event a walking rig is used, a variance is requested to use a flexible choke line with flanged ends between the BOP and choke manifold. The line will be kept as straight as possible with minimal turns. Actual specifications and certification will be provided via Sundry Notice if this option is exercised.

#### 4. CASING & CEMENT

All casing will be API, new, and tested to 0.22 psi/foot or a maximum of 1500 psi before drill out. See attached casing assumption worksheet. A tapered production string will be used to allow larger capacity 3.5" tubing. Premium connections will be used on the production string. See production string specification sheets.

Hole O. D.	Set MD	Set TVD	Casing O. D.	Weight (lb/ft)	Grade	Joint	SF Collapse	SF Burst	SF Tension
17.5"	0' - 450'	0' - 450'	Surface 13.375"	54.5	J-55	STC	5.37 (9.0#)	12.96 (#9.0)	24.30 (9.0#)
12.25"	0' - 9010'	0' - 8777'	Inter. 9.625"	47	L-80	BTC	1.26 (10.0#)	1.51 (10.0#)	2.72 (10.0#)
8.5"	0' - 9010'	0' - 8777'	Prod. 1 7"	26	P-110	CDC	1.37	2.18	3.56
8.5"	9010' - 20382'	8777' - 9350'	Prod. 2 5.5"	20	P-110	CDC	2.76 (9.5#)	2.47 (9.5#)	57.8 (9.5#)

Minimum BLM safety factors: collapse = 1.125, burst = 1.0, tension air = 1.6, and tension mud = 1.8.



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DRILL PLAN PAGE 4

'fee/fee/Fed well'

Name	Type	Sacks	Yield	Cu. Ft.	Weight	Blend
Surface	Tail	465	1.34	623	14.8	Class C + 2% CaCl
TOC = GL		100% Excess			Centralizers: shoe joint + every 3 <sup>rd</sup> joint to GL	
Intermediate Stage 1 (9010' – 2700')	Lead	1090	2.50	2725	11.3	TXI light + 5% salt + 4% SMS + additives
	Tail	200	1.19	238	15.6	Class H + additives
TOC = 2700'		50% Excess			Centralizers: shoe joint + above & below DV tool + every 4 <sup>th</sup> joint from shoe to GL	
Intermediate Stage 2 (2700' – GL)	Lead	660	2.19	1445	12.7	Class C + 6% gel + 5% salt + additives
	Tail	100	1.32	132	14.8	Class C
TOC = GL		100% Excess			Centralizers: shoe joint + above & below DV tool + every 4 <sup>th</sup> joint from shoe to GL	
Production	Tail	2425	1.27	3079	14.2	50/50/2 Poz/G/gel + additives
TOC = 8510' (500' above intermediate shoe)		15% Excess			Centralizers: shoe joint + every 4 <sup>th</sup> joint to 8510'	

## 5. MUD PROGRAM

An electronic pit volume totalizer will monitor volume, flow rate, pump pressure, and stroke rate. All necessary additives (e. g., barite, bentonite, LCM) to maintain mud quality and satisfy lost circulation and weight increase needs will be on site at all times. Mud program may change due to hole conditions. A closed loop system will be used.



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DRILL PLAN PAGE 5

'fee/fee/Fed well'

Type	Interval (MD)	lb/gal	Viscosity	Fluid Loss
fresh water spud mud	0' - 450'	8.4 - 9.0	28-34	N/C
brine water*	450' - 9010'	10.0	28-30	N/C
oil based mud	9010' - 20382'	10.0	50-55	<14 HPHT

\*Contingency for losses: 9.0-9.5 ppg pre-hydrated fresh gel mud system with MMS to control salt leaching.

#### 6. CORES, TESTS, & LOGS

No core, drill stem test, or log is planned.

#### 7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is  $\approx 6930$  psig. Expected bottom hole temperature is  $\approx 158^{\circ}$  F.

H2S monitoring and detection equipment will be used from surface casing point to TD.

#### 8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take  $\approx 4$  months to drill and complete the well.

Additional wells are planned on this pad. This well may be drilled with a walking rig. If that event occurs, then batch drilling of hole intervals will be performed. Idle well control will be ensured by not walking off a well until after the casing has been cemented, wellhead slips set, and a capping flanged nipped up.

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DRILL PLAN PAGE 6

'fee/fee/Fed well'

In the event a walking rig is used, a variance is requested to use a flexible choke line with flanged ends between the BOP and choke manifold. The line will be kept as straight as possible with minimal turns. Actual specifications and certification will be provided via Sundry Notice if this option is exercised.