

Form 3160-3  
(June 2015)UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 20185. Lease Serial No.  
NMLC062269A

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.  
GHOST RIDER 22 15 FEDERAL COM  
602H9. API Well No.  
30-025-5304410. Field and Pool, or Exploratory  
WC-025 G-09 S253204N/LOWER WOLF11. Sec., T. R. M. or Blk. and Survey or Area  
SEC 22/T24S/R32E/NMP1a. Type of work: ☒ DRILL ☐ REENTER  
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other  
1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone2. Name of Operator  
APACHE CORPORATION3a. Address  
303 VETERANS AIRPARK LANE SUITE 3000, MIDLAND  
3b. Phone No. (include area code)  
(432) 818-10004. Location of Well (Report location clearly and in accordance with any State requirements. \*)  
At surface SESW / 355 FSL / 2434 FEL / LAT 32.1967132 / LONG -103.661844  
At proposed prod. zone NWSE / 2588 FSL / 1980 FEL / LAT 32.217436 / LONG -103.660364714. Distance in miles and direction from nearest town or post office\*  
30 miles12. County or Parish  
LEA  
13. State  
NM15. Distance from proposed\*  
location to nearest  
property or lease line, ft.  
(Also to nearest drig. unit line, if any)  
50 feet

16. No of acres in lease

17. Spacing Unit dedicated to this well  
240.018. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft.  
30 feet19. Proposed Depth  
12878 feet / 20501 feet20. BLM/BIA Bond No. in file  
FED: BLM-CO-1463; NMB-00073621. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3596 feet22. Approximate date work will start\*  
05/30/202423. Estimated duration  
25 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  
(Electronic Submission)Name (Printed/Typed)  
SORINA FLORES / Ph: (432) 818-1000Date  
11/08/2023Title  
Supv of Drilling ServicesApproved by (Signature)  
(Electronic Submission)Name (Printed/Typed)  
CODY LAYTON / Ph: (575) 234-5959Date  
05/10/2024Title  
Assistant Field Manager Lands & MineralsOffice  
Carlsbad Field 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)



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>30-025-53044</b>	<sup>2</sup> Pool Code <b>98383</b>	<sup>3</sup> Pool Name <b>WC-025 G-09 S253204N; LOWER WOLFCAMP</b>
<sup>4</sup> Property Code <b>325016</b>	<sup>5</sup> Property Name <b>GHOST RIDER 22 15 FED COM</b>	<sup>6</sup> Well Number <b>602H</b>
<sup>7</sup> GRID NO. <b>873</b>	<sup>8</sup> Operator Name <b>APACHE CORPORATION</b>	<sup>9</sup> Elevation <b>3596'</b>

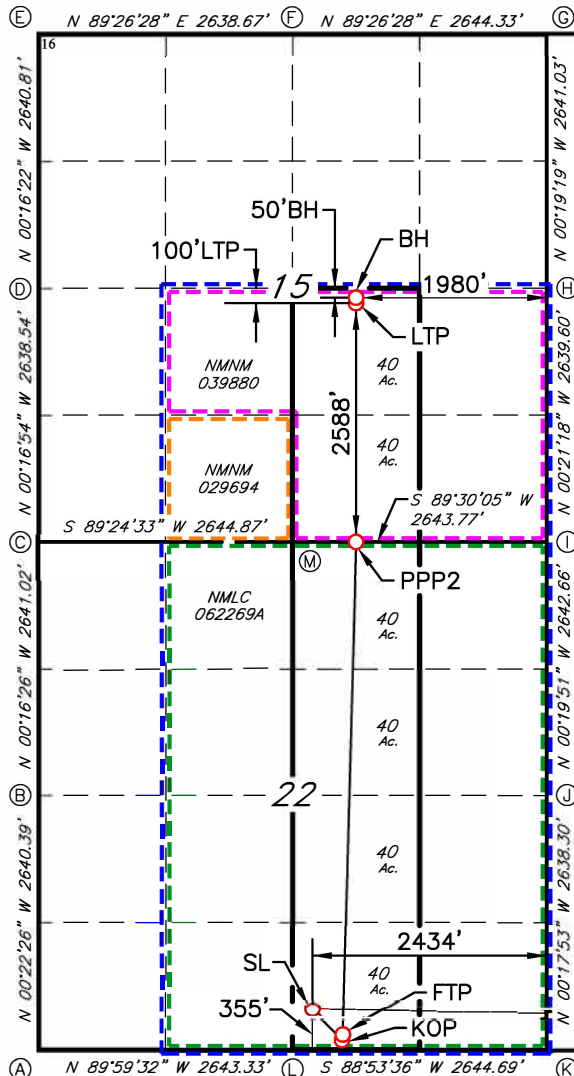
<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
<b>0</b>	<b>22</b>	<b>24S</b>	<b>32E</b>		<b>355</b>	<b>SOUTH</b>	<b>2434</b>	<b>EAST</b>	<b>LEA</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>J</b>	<b>15</b>	<b>24S</b>	<b>32E</b>		<b>2588</b>	<b>SOUTH</b>	<b>1980</b>	<b>EAST</b>	<b>LEA</b>
<sup>12</sup> Dedicated Acres <b>240</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.						

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 (SL)  
N: 435947.2 - E: 749047.6

LAT: 32.1967132° N  
LONG: 103.6618440° W

KICK OFF POINT (KOP)  
50' FSL & 2125' FEL - SEC.22  
N: 435651.0 - E: 749358.0

LAT: 32.1958938° N  
LONG: 103.6608466° W  
MD: 12326.2 - TVD: 12305.0

FIRST TAKE POINT (FTP)  
100' FSL & 2117' FEL - SEC.22  
N: 435698.4 - E: 749365.6

LAT: 32.1960238° N  
LONG: 103.6608212° W  
MD: 12561.4 - TVD: 12533.5

PROPOSED PENETRATION POINT 2 (PPP2)  
0' FSL & 1980' FEL - SEC.15  
N: 440901.8 - E: 749473.0

LAT: 32.2103248° N  
LONG: 103.6603685° W  
MD: 17913.8 - TVD: 12878.0

LAST TAKE POINT (LTP)  
2537' FSL & 1980' FEL - SEC.15  
N: 443438.5 - E: 749458.4

LAT: 32.2172977° N  
LONG: 103.6603646° W  
MD: 20451.8 - TVD: 12878.0

BOTTOM HOLE (BH)  
N: 443488.8 - E: 749458.0

LAT: 32.2174360° N  
LONG: 103.6603647° W  
MD: 20501.9 - TVD: 12878.0

<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.

**Sorina L Flores 11/6/23**

Signature: **Sorina L Flores**  
Printed Name: **sorina.flores@apachecorp.com**  
E-mail Address

<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.

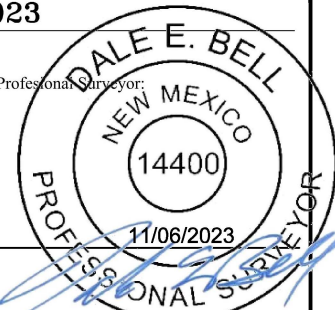
**10/10/2023**

Date of Survey

Signature and Seal of Professional Surveyor:

**14400**

Certificate Number



Job No.: LS23100907

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
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811 S. First St., Artesia, NM 88210  
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Form C-102  
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Submit one copy to appropriate  
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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number		<sup>2</sup> Pool Code		<sup>3</sup> Pool Name	
<sup>4</sup> Property Code		<sup>5</sup> Property Name <b>GHOST RIDER 22 15 FED COM</b>			<sup>6</sup> Well Number <b>602H</b>
<sup>7</sup> OGRID NO.		<sup>8</sup> Operator Name <b>APACHE CORPORATION</b>			<sup>9</sup> Elevation <b>3596'</b>


<sup>10</sup> Surface Location

UL or lot no. <b>0</b>	Section <b>22</b>	Township <b>24S</b>	Range <b>32E</b>	Lot Idn	Feet from the <b>355</b>	North/South line <b>SOUTH</b>	Feet From the <b>2434</b>	East/West line <b>EAST</b>	County <b>LEA</b>
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<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no. <b>J</b>	Section <b>15</b>	Township <b>24S</b>	Range <b>32E</b>	Lot Idn	Feet from the <b>2588</b>	North/South line <b>SOUTH</b>	Feet from the <b>1980</b>	East/West line <b>EAST</b>	County <b>LEA</b>
<sup>12</sup> Dedicated Acres		<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> Order No.			

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.

<p><sup>16</sup></p> <p style="text-align: center;"><u>CORNER DATA</u> NAD 83 GRID — NM EAST</p> <p>A: FOUND BRASS CAP "1916" N: 435588.5 — E: 746196.1</p> <p>B: FOUND BRASS CAP "1916" N: 438228.3 — E: 746178.8</p> <p>C: FOUND BRASS CAP "1916" N: 440868.8 — E: 746166.2</p> <p>D: FOUND BRASS CAP "1916" N: 443506.7 — E: 746153.3</p> <p>E: FOUND BRASS CAP "1916" N: 446146.9 — E: 746140.7</p> <p>F: FOUND BRASS CAP "1916" N: 446172.7 — E: 748778.7</p> <p>G: CALCULATED CORNER N: 446198.5 — E: 751422.3</p> <p>H: FOUND BRASS CAP "1916" N: 443558.0 — E: 751437.2</p> <p>I: FOUND BRASS CAP "1916" N: 440919.0 — E: 751453.5</p> <p>J: FOUND BRASS CAP "1916" N: 438277.0 — E: 751468.8</p> <p>K: FOUND BRASS CAP "1916" N: 435639.2 — E: 751482.5</p> <p>L: FOUND BRASS CAP "1916" N: 435588.2 — E: 748838.8</p> <p>M: FOUND BRASS CAP "1916" N: 440896.0 — E: 748810.4</p>	<p><sup>17</sup> <b>OPERATOR CERTIFICATION</b></p> <p><i>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.</i></p> <p>Signature _____ Date _____</p> <p>Printed Name _____</p> <p>E-mail Address _____</p> <p><sup>18</sup> <b>SURVEYOR CERTIFICATION</b></p> <p><i>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.</i></p> <p><b>10/10/2023</b> Date of Survey</p> <p>Signature and Seal of Professional Surveyor _____</p> <p><b>14400</b> Certificate Number</p> <p style="text-align: center;">  </p>
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Job No.: LS23100907

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

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

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description

Effective May 25, 2021

**I. Operator:** APACHE CORPORATION **OGRID:** 873 **Date:** 10 / 15 / 2023

**II. Type:** ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Ghost Rider Fed Com 601H		Sec 14 T19S R32E	' FSL ' FWL	775	4700	4100
Ghost Rider Fed Com 602H		Sec 14 T19S R32E	' FSL ' FWL	775	4700	4100
Ghost Rider Fed Com 603H		Sec 14 T19S R32E	' FSL ' FWL	775	4700	4100

**IV. Central Delivery Point Name:** Ghost Rider 22 15 Fed CTB [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Ghost Rider Fed Com 601H		6/1/24	6/28/24	Not yet scheduled	Not yet scheduled	Not yet scheduled
Ghost Rider Fed Com 602H		7/1/24	7/28/24	Not yet scheduled	Not yet scheduled	Not yet scheduled
Ghost Rider Fed Com 603H		8/1/24	8/28/24	Not yet scheduled	Not yet scheduled	Not yet scheduled



**VI. Separation Equipment:** ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:** ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:** ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

## **Section 2 – Enhanced Plan**

### **EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

#### **IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

#### **X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.** ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:** ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

### **Section 3 - Certifications**

**Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

**XX**Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.** ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.** ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

### **Section 4 - Notices**

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:	<i>Sorina L Flores</i>
Printed Name:	<b>Sorina L Flores</b>
Title:	<b>Sr Regulatory Analyst</b>
E-mail Address:	<b>sorina.flores@apachecorp.com</b>
Date:	
Phone:	<b>432-818-1167</b>
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>	
Approved By:	
Title:	
Approval Date:	
Conditions of Approval:	

**VI. SEPARATION EQUIPMENT**

*(Complete description of how Apache will size separation equipment to optimize gas capture)*

Apache Corporation production tank batteries will include separation equipment designed to efficiently separate gas from liquid phases to optimize gas capture based on projected and estimated volumes from the targeted pool in conjunction with the total number of wells planned to/or existing within the facility. If determined to be undersized or needed, separation equipment will be upgraded prior to well(s) being drilled or completed. The separation equipment will be designed and built according to relevant industry specifications, ie API specifications 12J and ASME Sec VIII Div 1. Other recognized industry publications such as Gas Processors Suppliers Association will be referenced when designing separation equipment to optimize gas capture.

**VII. OPERATIONAL PRACTICES**

*(Complete description of actions Apache will take to comply with the requirements of Subsection A-F of 19.15.27.8 NMAC)*

**(A) Venting & flaring of natural gas**

- Apache acknowledges venting or flaring of natural gas during drilling, completion, or production operations constitutes as defined in 19.15.2 NMAC is prohibited. Apache will maximize recovery of natural gas by minimizing waste of natural gas through venting and flaring. During drilling, completion and production operations, Apache will vent, or flare natural gas only as authorized in subsections B, C and D of 19.15.27.8 NMAC. Apache shall flare rather than vent natural gas except when flaring technically infeasible or would pose a risk to safe operations or personnel safety, and venting is a safer alternative than flaring.

**(B) Venting & flaring during drilling operations**

- Apache shall capture or combust natural gas, if technically feasible, using best industry practices and control technologies
- A properly sized flare stack will be located at a minimum of 100 feet from the nearest surface hole location unless otherwise approved by the division.
- In the event of an emergency or malfunction, Apache may vent natural gas to avoid risk of an immediate and substantial adverse impact on safety, public health, or the environment. Apache shall report natural gas vented or flared during an emergency or malfunction to the NMOCD division pursuant Paragraph (1) of Subsection G of 19.15.27.8 NMAC.

**(C) Venting & flaring during completions and recompletion**

- During initial flowback, Apache shall route flowback fluids into a completion or storage tank and, if technically feasible under the applicable well conditions, flare rather than vent and commence operations of a separator as soon as it is technically feasible for a separator to function.
- During separation flowback, Apache shall capture and route natural gas from separation equipment:
  - ◆ To a gas flowline or collection system, reinject into the well, or use on-site as a fuel source or other purpose that a purchased fuel or raw material would serve; or
  - ◆ To flare if routing natural gas to a gas flowline or collecting system, reinjecting it into the well, or using it on-site as fuel source or other purpose that a purchased fuel or raw material would serve would pose a risk to safe operation or personnel safety.
- If natural gas does not meet gathering pipeline quality specifications, Apache may flare natural gas for 60 days or until the natural gas meets pipeline quality specifications, whichever is sooner, provided:
  - ◆ A properly sized flare stack is equipped with an automatic igniter or continuous pilot
  - ◆ Apache analyzes natural gas samples twice per week
  - ◆ Apache routes natural gas into a gathering pipeline as soon as pipeline specifications are met
  - ◆ Apache provides pipeline specifications and natural gas analyses to NMOCD division upon request

**(D) Venting & flaring during production operations**

- Apache shall not vent or flare natural gas except:
  - ◆ During an emergency or malfunction
  - ◆ To unload or clean up liquid holdup in a well to atmospheric pressure, provided:
    - Apache does not vent after well achieves stabilized rate and pressure
    - For liquids unloading by manual purging, Apache remains present on-site until the end of unloading or posts at the well site, contact information of personnel conducting liquids unloading operations in close proximity (<30 minutes' drive time) of well being unloaded until end of unloading, takes all

- reasonable actions to achieve stabilized rate and pressure at earliest practical time and takes reasonable actions to minimize venting to maximum extent practicable
- Apache will optimize system to minimize venting of natural gas for any well equipped with a plunger lift system or automated control system
- During downhole maintenance, best management practices will be used to the extent that it does not pose a risk to safe operations and personnel safety.
- ◆ During first 12 months of production from an exploratory well, or as extended by the division for good cause shown, provided:
  - Apache proposes and the division approves well as exploratory
  - Apache is in compliance with its' statewide gas capture requirements
  - Apache submits an updated C-129 form to the division, including a NGMP and timeline for connecting well to a natural gas gathering system or otherwise approved by the division
- ◆ During the following activities unless prohibited
  - Gauging or sampling a storage tank or other low pressure production vessel
  - Loading out liquids from a storage tank or other low pressure production vessel to a transport vehicle
  - Repair and maintenance, including blowing down and depressurizing production equipment to perform repair and maintenance
  - Normal operation of gas activated pneumatic controller or pump
  - Normal operation of storage tank or other low pressure production vessel, but not including venting from a thief hatch that is not properly closed or maintained on an established schedule
  - Normal operations of dehydration units and amine treatment units
  - Normal operations of compressors, compressor engines, and turbines
  - Normal operations of valves, flanges and connectors that is not the result of inadequate equipment design or maintenance
  - Bradenhead, packer leakage test or production test lasting less than 24 hours unless the division requires or approves a longer test period
  - When natural gas does not meet gathering pipeline specifications
  - Commissioning of pipelines, equipment, or facilities only for as long as necessary to purge introduced impurities from pipeline or equipment

#### **(E) Performance standards**

- All tanks and separation equipment are designed for maximum throughput and pressure to minimize waste
- Permanent storage tanks associated with production operations that is routed to a flare or control device installed after May 25, 2021, shall equip storage tank with an automatic gauging system that reduces venting of natural gas
- Apache will install a flare properly sized and designed to ensure proper combustion efficiency
  - ◆ Flare stack installed or replaced after May 25, 2021, shall be equipped with an automatic ignitor or continuous pilot
  - ◆ Flare stack installed before May 25, 2021, shall be retrofitted with an automatic ignitor, continuous pilot or technology that alerts operator that flare may have malfunctioned no later than 18 months after May 25, 2021
  - ◆ Flare stack located at well or facility, with an average daily production of equal to or less than 60 mcf of natural gas shall be equipped with an automatic ignitor or continuous pilot if flare stack is replaced after May 25, 2021
- Flare stack constructed after May 25, 2021, shall be securely anchored, and located at least 100 feet from well and storage tanks unless otherwise approved by the division
- At any point in the life of the well (drilling, completion, production, inactive) an audio, visual and olfactory (AVO) inspection will be performed weekly, during first year of production and on well or facility with average daily production greater than 60,000 cubic feet of natural gas, to confirm all production components are operating properly and there are no leaks or releases except as allowed in Subsection D of 19.15.27.8 NMAC.
- Apache will make and keep records of AVO inspections available to NMOCD for at least 5 years
- Apache may use a remote or automated monitoring technology to detect leaks and release in lieu of AVO inspections with prior NMOCD approval
- Facilities will be designed to minimize waste
- Apache will minimize waste and shall resolve emergencies as quickly and safely as feasible



**(F) Measurement or estimation of vented and flared natural gas**

- Apache shall measure or estimate volume of natural gas it vents, flares, or beneficially uses during drilling, completion, and production operations regardless of the reason or authorization for such venting or flaring
- Measurement equipment will be installed to measure volume of natural gas flared from existing process piping or flowline piped from equipment associated with a well or facility associated with approved application for permit to drill that has an average daily production greater than 60 mcf of natural gas
- Measuring equipment shall conform to an industry standard
- Measuring equipment shall not be designed or equipped with a manifold that allows diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment
- Apache may estimate volume of vented or flared natural gas using methodology that can be independently verified if metering is not practicable due to low flow rate or pressure
- Apache will estimate volume of vented and flared natural gas based on result of an annual GOR test for that well reported on form C-116 to allow division to independently verify volume and rate of flared natural gas for a well that does not require measuring equipment
- Apache shall install measuring equipment whenever the division determines metering is practicable or the existing measuring equipment or GOR test is not sufficient to measure volume of vented and flared natural gas

**VIII. BEST MANAGEMENT PRACTICES**

*(Complete description of Apache's best management practices to minimize venting during active and planned maintenance)*

- Apache has a flare stack designed to handle sufficient volume to ensure proper combustion efficiency. Flare stacks are securely anchored at least 100 feet from wells and storage tanks and are equipped with continuous pilots.
- Apache will not produce oil or gas but will maintain adequate well control through completion operations
- Apache will not flow well during initial production until all flowlines, tank batteries, and oil/gas takeaway are installed, tested, and determined operational
- Apache will equip storage tanks with automatic gauging system to reduce venting of natural gas
- When feasible, Apache will combust natural gas that would otherwise be vented or flared
- When feasible, Apache will minimize venting through pump downs of vessels and reducing time required to purge equipment before returning to service
- When feasible, Apache will shut in wells in the event of a takeaway disruption, emergency situations, or other operations where venting or flaring may occur due to equipment failures
- Reduce number of blowdowns by looking for opportunities to coordinate repair and maintenance activities

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	APACHE CORPORATION
WELL NAME & NO.:	GHOST RIDER 22 15 FED COM 602H
SURFACE HOLE FOOTAGE:	355'/S & 2434'/E
BOTTOM HOLE FOOTAGE:	2588'/S & 1980'/E
LOCATION:	Section 22, T.24 S., R.32 E., NMP
COUNTY:	Lea County, New Mexico

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input 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
Wellhead Variance	<input type="radio"/> Diverter		
Other	<input type="checkbox"/> 4 String	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Pilot Hole	<input type="checkbox"/> Open Annulus
Cementing	<input type="checkbox"/> Contingency Cement Squeeze	<input checked="" type="checkbox"/> EchoMeter	<input checked="" type="checkbox"/> Primary Cement Squeeze
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input checked="" type="checkbox"/> Break Testing	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

### A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated AT SPUD. As a result, the Hydrogen Sulfide area must meet 43 CFR part 3170 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

### B. CASING

#### Primary Casing Design:

1. The 13-3/8 inch surface casing shall be set at approximately **1089 feet** (a minimum of 25 feet (Lea County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.

- 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 **7-5/8** inch intermediate casing is:

Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.

- a. First stage: Operator will cement with intent to reach the top of the **Brushy Canyon at 7085'**.
- b. Second stage:
  - Operator will perform bradenhead squeeze and top-out. Cement to surface. If cement does not reach surface, the appropriate BLM office shall be notified.

**Operator has proposed to pump down 13-3/8" X 7-5/8" annulus after primary cementing stage. Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus Or operator shall run a CBL from TD of the 7-5/8" casing to surface after the second stage BH to verify TOC.**

**Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry between second stage BH and top out. Operator must run one CBL per Well Pad.**

**If cement does not reach surface, the next casing string must come to surface.**

**Operator must use a limited flush fluid volume of 1 bbl following backside cementing procedures.**

**Casing test must be conducted in accordance with 43 CFR 3170. Surface pressure**

**applied will vary based on fluid in the casing and burst conditions.**

3. The minimum required fill of cement behind the **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.  
**Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

### **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 **13-3/8** inch 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. Variance is approved to use a 5000 (5M) Annular which shall be tested to 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 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.

- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in Onshore Order 1 and 2.
- 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.

**(Note: For a minimum 5M BOPE or less (Utilizing a 10M BOPE system))**

**BOPE Break Testing Variance**

- BOPE Break Testing is ONLY permitted for 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-689-5981 Lea County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per Onshore Oil and Gas Order No. 2.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

## 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

**EMAIL** or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

**[BLM\\_NM\\_CFO\\_DrillingNotifications@BLM.GOV](mailto:BLM_NM_CFO_DrillingNotifications@BLM.GOV)**

(575) 361-2822



☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,  
(575) 689-5981

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 **43 CFR part 3170 Subpart 3172** 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 **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.
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 cement), 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** 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 **43 CFR part 3170 Subpart 3172**.

#### 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.

JS 5/8/2024





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

# Operator Certification Data Report

05/13/2024

## Operator

*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:** SORINA FLORES

**Signed on:** 10/24/2023

**Title:** Supv of Drilling Services

**Street Address:** 303 Veterans Airpark Ln #1000

**City:** Midland

**State:** TX

**Zip:** 79705

**Phone:** (432)818-1167

**Email address:** sorina.flores@apachecorp.com

## Field

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**



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

## Application Data

05/13/2024

APD ID: 10400095263

Submission Date: 11/08/2023

Highlighted data  
reflects the most  
recent changes  
[Show Final Text](#)

Operator Name: APACHE CORPORATION

Well Name: GHOST RIDER 22 15 FEDERAL COM

Well Number: 602H

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - General

APD ID: 10400095263

Tie to previous NOS? N

Submission Date: 11/08/2023

BLM Office: Carlsbad

User: SORINA FLORES

Title: Supv of Drilling Services

Federal/Indian APD: FED

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

Lease number: NMLC062269A

Lease Acres:

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? N

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? Y

Permitting Agent? NO

APD Operator: APACHE CORPORATION

Operator letter of

### Operator Info

Operator Organization Name: APACHE CORPORATION

Operator Address: 303 VETERANS AIRPARK LANE SUITE 3000

Zip: 79705

Operator PO Box:

Operator City: MIDLAND

State: TX

Operator Phone: (432)818-1000

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: GHOST RIDER 22 15 FEDERAL COM

Well Number: 602H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WC-025 G-09  
S253204N

Pool Name: LOWER  
WOLFCAMP

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,NATURAL GAS,OIL,POTASH**Is the proposed well in a Helium production area?** N**Use Existing Well Pad?** Y**New surface disturbance?** N**Type of Well Pad:** MULTIPLE WELL**Multiple Well Pad Name:**  
GHOST RIDER 22 15 FEDERAL  
COM**Number:** PAD 2 SOUTH**Well Class:** HORIZONTAL**Number of Legs:** 1**Well Work Type:** Drill**Well Type:** OIL WELL**Describe Well Type:****Well sub-Type:** OTHER**Describe sub-type:** Development**Distance to town:** 30 Miles**Distance to nearest well:** 30 FT**Distance to lease line:** 50 FT**Reservoir well spacing assigned acres Measurement:** 240 Acres**Well plat:** Plat\_GhostRider22\_15FedCom602H\_NAD83\_signed\_20231108112545.pdf**Well work start Date:** 05/30/2024**Duration:** 25 DAYS**Section 3 - Well Location Table****Survey Type:** RECTANGULAR**Describe Survey Type:****Datum:** NAD83**Vertical Datum:** NAVD88**Survey number:****Reference Datum:** GROUND LEVEL

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
SHL Leg #1	355	FSL	243 4	FEL	24S	32E	22	Aliquot SESW	32.19671 32	- 103.6618 44	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 62269A	359 6	0	0	Y
KOP Leg #1	50	FSL	212 5	FEL	24S	32E	22	Aliquot SESW	32.19589 38	- 103.6608 466	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 62269A	- 870 9	123 26	123 05	Y

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H

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
PPP Leg #1-1	100	FSL	211 7	FEL	24S	32E	22	Aliquot SESW	32.19602 38	- 103.6608 212	LEA	NEW MEXI CO	NEW MEXI CO	F	NMLC0 62269A	- 893 7	125 61	125 33	Y
PPP Leg #1-2	0	FSL	198 0	FEL	24S	32E	15	Aliquot SESW	32.21032 48	- 103.6603 685	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 039880	- 928 2	179 13	128 78	Y
EXIT Leg #1	253 7	FSL	198 0	FEL	24S	32E	15	Aliquot NWSE	32.21729 77	- 103.6603 646	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 039880	- 928 2	204 51	128 78	Y
BHL Leg #1	258 8	FSL	198 0	FEL	24S	32E	15	Aliquot NWSE	32.21743 6	- 103.6603 647	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 039880	- 928 2	205 01	128 78	Y



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

# Drilling Plan Data Report

05/13/2024

APD ID: 10400095263

Submission Date: 11/08/2023

Highlighted data  
reflects the most  
recent changes

Operator Name: APACHE CORPORATION

Well Name: GHOST RIDER 22 15 FEDERAL COM

Well Number: 602H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
13409205	QUATERNARY	3646	0	0	ALLUVIUM	USEABLE WATER	N
13409206	RUSTLER	2608	1038	1038	ANHYDRITE	POTASH	N
13409207	SALADO	2283	1363	1363	ANHYDRITE	POTASH	N
13409208	CASTILE	-453	4099	4112	LIMESTONE, MUDSTONE, SANDSTONE	NATURAL GAS, OIL	N
13409212	CHERRY CANYON	-1993	5639	5660	LIMESTONE, MUDSTONE, SANDSTONE	NATURAL GAS, OIL	N
13409213	BRUSHY CANYON	-3906	7552	7573	LIMESTONE, MUDSTONE, SANDSTONE	NATURAL GAS, OIL	N
13409214	BONE SPRING	-5129	8775	8796	LIMESTONE, MUDSTONE, SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	N
13409217	BONE SPRING 1ST	-6235	9881	9903	LIMESTONE, MUDSTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	N
13409219	BONE SPRING 2ND	-6928	10574	10595	LIMESTONE, MUDSTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	N
13409220	BONE SPRING 3RD	-8151	11797	11819	LIMESTONE, MUDSTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	N
13409221	WOLFCAMP	-9057	12703	12767	LIMESTONE, MUDSTONE, SANDSTONE, SILTSTONE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M

Rating Depth: 12877

Equipment: Equipment will consist of rotating head, mud gas separator, blowdown pit (panic line) and flare line

Requesting Variance? YES

**Variance request:** 1. A variance is requested to allow use of flex hose as choke line f/BOP to choke manifold. If this hose is used, a copy of manufacturer's certification and pressure test chart will be kept on rig. Manufacture does not require anchors.  
2. In any instance where 10M BOP is required by BLM, Apache



**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H

requests a variance to utilize 5M annular with 10M ram preventers(a common BOP configuration, which allows use of 10M rams in unlikely event that pressure exceed 5M). A variance is requested to test 5M annular to 70% of working pressure at 3500psi. 3. Per mtg on 4/7/22, Apache requests variance to be able to batch drill well if necessary. In doing so, Apache will set ea. csg string and ensure well is cmt'd properly and well is static. W/floats holding, no pressure on csg annulus, and installation of TA cap per wellhead recommendations, Apache will contact BLM on ea. rig skid on pad, once surf and interm strings are all completed. 4. Per mtg on 4/7/22, a variance is requested to ONLY test broken pressure seals on BOP equip when moving f/wellhead to wellhead which is in compliance w/API standard 53. API standard 53 states that for pad drilling operation, moving from one wellhead to another within 30 days, pressure testing is required for pressure-containing and pressure-controlling connections when integrity of pressure seal is broken. Apache will function test BOP equip after each nipple up. Full BOP test will be required prior to drlg 1st prod hole and every 30 days after.

**Testing Procedure:** Once permanent WH is installed on 13.375 csg, BOP equip will consist of 13-5/8" min 3M Hydril and 13-5/8" min 10M 3-Ram BOP. MASP should not exceed 2717 psi. All BOP testing will be done by independent service company. Annular pressure tests will be limited to 70% of WP. When nipping up on 13.375, 10M Bradenhead and flange, BOP test will be limited to 10000 psi. All BOP tests will be include a low pressure test as per BLM regulations. 10M BOP diagrams attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested at a minimum every 7 days.

**Choke Diagram Attachment:**

10MChokeManifold\_20230927141148.pdf

**BOP Diagram Attachment:**

GhostRider22\_15FedCom\_5M\_Annular\_10M\_BOP\_20231012140113.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	1089	0	1089	3596	2507	1089	J-55	54.5	BUTT	2	1.01	BUOY	14.37	BUOY	14.37
2	INTERMEDIATE	9.875	7.625	NEW	API	N	0	11691	0	11691	0	-8095	11691	HCL-80	29.7	BUTT	2.58	1.17	BUOY	1.97	BUOY	1.97
3	PRODUCTION	6.75	5.5	NEW	NON API	N	0	20482	0	12877	0	-9281	20482	OTHER	20	OTHER - Semi-premium	1.28	1.26	BUOY	1.75	BUOY	1.75

**Casing Attachments**

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H**Casing Attachments**

---

**Casing ID:** 1      **String**      SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Dustbowl11\_14FedCom\_SurfCsgAssumpt\_20231005092558.pdf

---

**Casing ID:** 2      **String**      INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**GhostRider22\_15FedCom\_IntermCsgAssumpt\_20231024122218.pdf

---

**Casing ID:** 3      **String**      PRODUCTION**Inspection Document:****Spec Document:**

GhostRider22\_15FedCom\_Prod5.5\_20lb\_P110HC\_SpecSheet\_20231024122329.pdf

**Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**GhostRider22\_15FedCom\_SurfCsgAssumpt\_20231024122349.pdf

---

**Section 4 - Cement**

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	789	620	1.72	13.5	1.39	100	Cl C	5% Sodium chloride, 0.35% metasilicate
SURFACE	Tail		789	1089	205	1.34	14.8	0.8	15	Cl C	0.003 gal/sk Foam preventer, 0.25% sodium metasilicate
INTERMEDIATE	Lead		7552	1139 1	597	2.76	11.3	0.43	100	Cl C	0.2% Anti-foam, 0.55% retarder
INTERMEDIATE	Tail		1139 1	1169 1	63	1.34	14.8	0.25	15	Cl C	0.1% fluid loss, 0.2% retarder, 0.2% anti-foam
PRODUCTION	Lead	7534	1149 1	1232 6	31	2.59	11.5	0.19	15	Cl C	0.2% Anti-foam, 0.45% retarder, 0.4% fluid loss
PRODUCTION	Tail		1232 6	2048 2	515	1.53	13.2	0.1	15	Cl H	0.2% anti-foam, 0.4% fluid loss

### 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:** Spud with FW/Native mud, set 13.375 surf csg, isolating FW aquifer. Drill out from under 13.375 surf csg with brine/oil direct emulsion mud system. Use fibrous materials as needed to control seepage and lost circ. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on daily drlg report after mudding up.

**Describe the mud monitoring system utilized:** Pason or Totco will be used to detect changes in loss or gain of mud volume. Mud test will be performed every 24hrs to determine: density, viscosity, strength, filtration, pH as necessary. Use available solids controls equip to help keep mud weight down after mud up. Rig up solids control equip to operate as closed loop system.

### 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	1089	OTHER : FW/Native (spud mud)	9.3	10.5							

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H

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
1089	1169 1	OTHER : Brine/Cut Brine/Direct emulsion	8	9.2							
1169 1	2048 2	OTHER : Cut Brine/WBM/OB M	12.3	13.5							

### Section 6 - Test, Logging, Coring

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

Will run GR/CNL from TD to surf (horizontal well-vertical portion of hole). Stated logs run will be in completion report and submitted to BLM.

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

GAMMA RAY LOG,DIRECTIONAL SURVEY,MEASUREMENT WHILE DRILLING,MUD LOG/GEOLOGICAL LITHOLOGY LOG,

**Coring operation description for the well:**

No coring planned

### Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 8705

**Anticipated Surface Pressure:** 5871

**Anticipated Bottom Hole Temperature(F):** 150

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

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards**

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

**Hydrogen sulfide drilling operations**

GhostRider22\_15FedCom\_H2SOpsContPlan\_20231012142529.pdf

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H

## Section 8 - Other Information

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

GhostRider22\_15FedCom602\_DirectionalPlan\_20231024122744.pdf

**Other proposed operations facets description:**

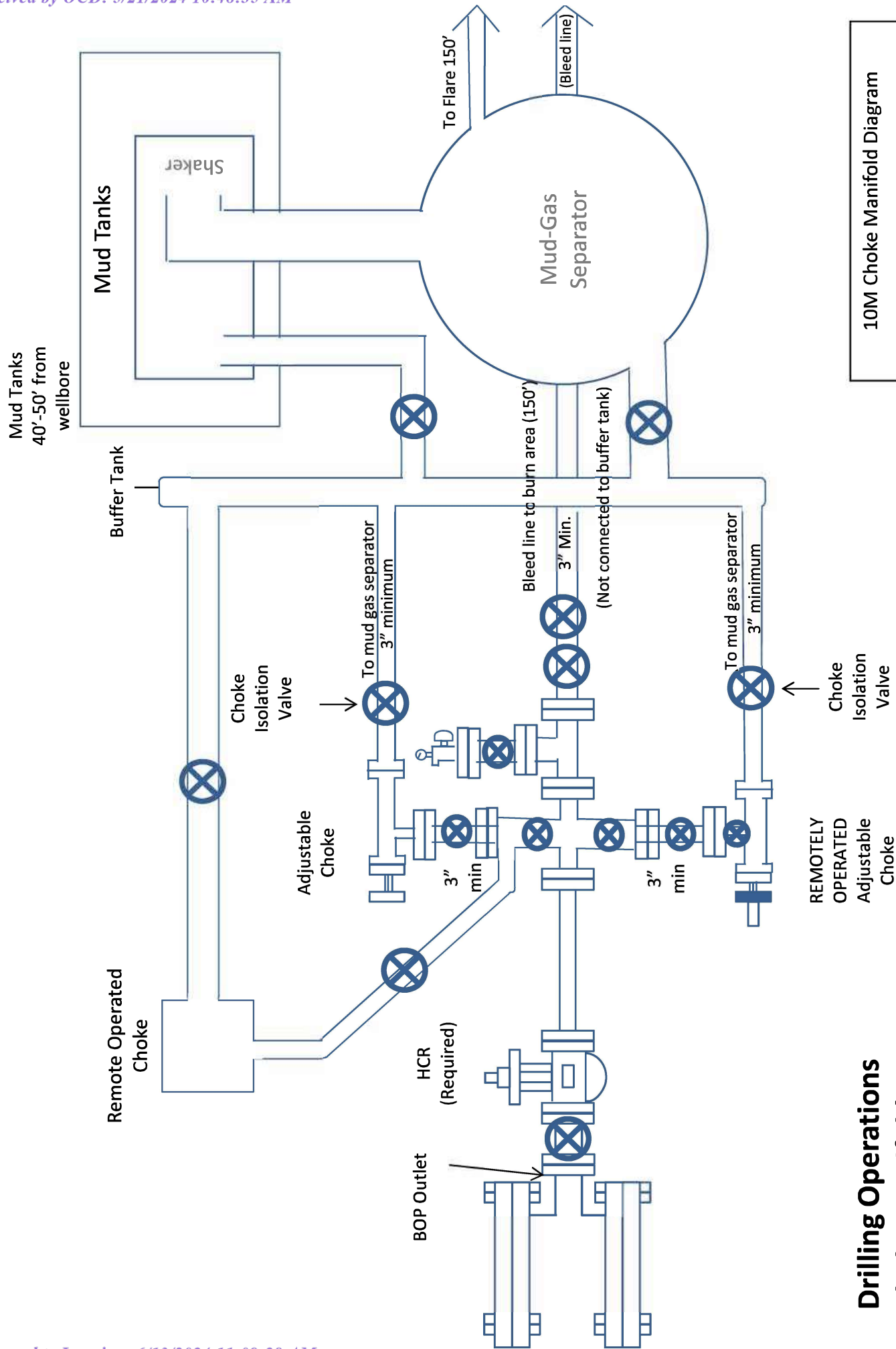
1. No H2S is expected but monitors will be in place to detect H2S occurrences. Should circumstances be encountered, operator and drlg contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. H2S plan attached. 2. Apache respectfully request approval to utilize spudder rig to pre-set surf csg. Please see attachment for procedure. 3. Due to system constraints, unable to clearly depict Intermediate 2nd stage/sqz. Please see attached Drilling Program for full detail.

**Other proposed operations facets attachment:**

Spudder\_Rig\_Procedure\_20230927150016.pdf

GhostRider22\_15FedCom602H\_DrlgPlan\_20231024122919.pdf

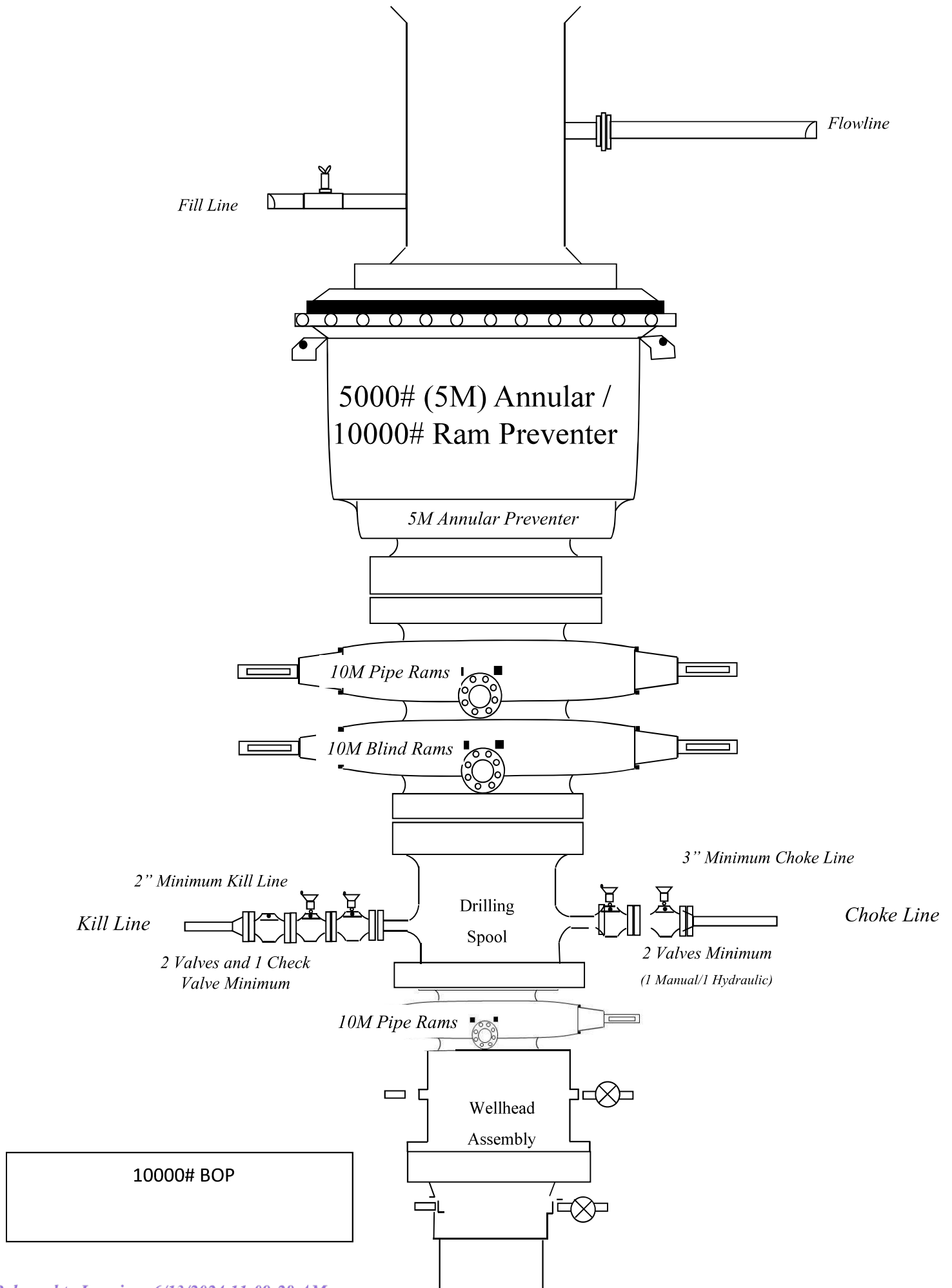
**Other Variance attachment:**



10M Choke Manifold Diagram

Drilling Operations  
Choke Manifold  
10M Service







U. S. Steel Tubular Products

5.500" 20.00lb/ft (0.361" Wall) P110 HC USS-CDC HTQ<sup>®</sup>

10/5/2021 10:24:00 AM



MECHANICAL PROPERTIES	Pipe	USS-CDC HTQ <sup>®</sup>		--
Minimum Yield Strength	110,000	--	psi	--
Maximum Yield Strength	140,000	--	psi	--
Minimum Tensile Strength	125,000	--	psi	--
DIMENSIONS	Pipe	USS-CDC HTQ <sup>®</sup>		--
Outside Diameter	5.500	6.300	in.	--
Wall Thickness	0.361	--	in.	--
Inside Diameter	4.778	4.778	in.	--
Standard Drift	4.653	4.653	in.	--
Alternate Drift	--	--	in.	--
Nominal Linear Weight, T&C	20.00	--	lb/ft	--
Plain End Weight	19.83	--	lb/ft	--
SECTION AREA	Pipe	USS-CDC HTQ <sup>®</sup>		--
Critical Area	5.828	5.828	sq. in.	--
Joint Efficiency	--	100.0	%	--
PERFORMANCE	Pipe	USS-CDC HTQ <sup>®</sup>		--
Minimum Collapse Pressure	12,200	12,200	psi	--
External Pressure Leak Resistance	--	9,760	psi	--
Minimum Internal Yield Pressure	12,640	12,640	psi	--
Minimum Pipe Body Yield Strength	641,000	--	lb	--
Joint Strength	--	667,000	lb	--
Compression Rating	--	400,000	lb	--
Reference Length	--	22,233	ft	--
Maximum Uniaxial Bend Rating	--	57.2	deg/100 ft	--
MAKE-UP DATA	Pipe	USS-CDC HTQ <sup>®</sup>		--
Make-Up Loss	--	4.63	in.	--
Minimum Make-Up Torque	--	13,000	ft-lb	--
Maximum Make-Up Torque	--	18,500	ft-lb	--
Connection Yield Torque	--	22,900	ft-lb	--

UNCONTROLLED

Notes

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 Cal II.

Legal Notice

USS - CDC HTQ<sup>®</sup> (High Torque Casing Drilling Connection) is a trademark of U. S. Steel Corporation. This product is a modified API Buttress threaded and coupled connection designed for drilling with casing applications. All material contained in this publication is for general information only. This material should not therefore be used or relied upon for any specific application without independent competent professional examination and verification of accuracy, suitability and applicability. Anyone making use of this material does so at their own risk and assumes any and all liability resulting from such use. U. S. Steel disclaims any and all expressed or implied warranties of fitness for any general or particular application.

## Casing Design Assumptions and Load Cases

## Surface

All casing design assumptions were ran in StressCheck to determine safety factors which meet or exceed both Apache Corp and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the casing.

Surface Casing Burst Design		
Load Case	External Pressure	Internal Pressure
Pressure Test	Mud and Cement Mix Water	Test psi with Mud Weight of displacement fluid
Fracture @ shoe w/ Gas Gradient Above	Mud and Cement Mix Water	Fracture psi at shoe and 0.7 gas gravity above shoe
Green Cement Pressure Test	Mud and Cement Mix Water	Max pressure used to bump the plug during cement job
Lost Returns with Water	Mud and Cement Mix Water	Pressure to fracture shoe with water hydrostatic

Surface Casing Collapse Design		
Load Case	External Pressure	Internal Pressure
Full/Partial Evacuation	Mud weight string was set in	50% casing evacuation with surface mud inside casing
Lost Returns with Mud Drop	Mud weight string was set in	Lost returns at intermediate casing point with brine
Cementing	Wet cement weight	Water (8.33 ppg)

Surface Casing Axial Design	
Load Case	Assumptions
Overpull	100 kips
Running in hole	2 ft/s
Green Cement Pressure Test	Max pressure when bumping plug
Service Loads	N/A

## Casing Design Assumptions and Load Cases

## Intermediate

All casing design assumptions were ran in StressCheck to determine safety factors which meet or exceed both Apache Corp and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the casing.

Intermediate Casing Burst Design		
Load Case	External Pressure	Internal Pressure
Pressure Test	Mud and Cement Mix Water	Test psi with Mud Weight of displacement fluid
Fracture @ shoe w/ Gas Gradient Above	Mud and Cement Mix Water	Fracture psi at shoe and 0.7 gas gravity above shoe
Green Cement Pressure Test	Mud and Cement Mix Water	Max pressure used to bump the plug during cement job
Lost Returns with Water	Mud and Cement Mix Water	Pressure to fracture shoe with water hydrostatic

Intermediate Casing Collapse Design		
Load Case	External Pressure	Internal Pressure
Full/Partial Evacuation	Mud weight string was set in	50% casing evacuation with intermediate mud inside casing
Lost Returns with Mud Drop	Mud weight string was set in	Lost returns at TD casing shoe with 9.2 ppg mud
Cementing	Wet cement weight	Water (8.33 ppg)

Intermediate Casing Axial Design	
Load Case	Assumptions
Overpull	100 kips
Running in hole	2 ft/s
Green Cement Pressure Test	Max pressure when bumping plug
Service Loads	N/A

## Casing Design Assumptions and Load Cases

## Surface

All casing design assumptions were ran in StressCheck to determine safety factors which meet or exceed both Apache Corp and BLM minimum requirements. All casing strings will be filled while running in hole in order to not exceed collapse rating of the casing.

Surface Casing Burst Design		
Load Case	External Pressure	Internal Pressure
Pressure Test	Mud and Cement Mix Water	Test psi with Mud Weight of displacement fluid
Fracture @ shoe w/ Gas Gradient Above	Mud and Cement Mix Water	Fracture psi at shoe and 0.7 gas gravity above shoe
Green Cement Pressure Test	Mud and Cement Mix Water	Max pressure used to bump the plug during cement job
Lost Returns with Water	Mud and Cement Mix Water	Pressure to fracture shoe with water hydrostatic

Surface Casing Collapse Design		
Load Case	External Pressure	Internal Pressure
Full/Partial Evacuation	Mud weight string was set in	50% casing evacuation with surface mud inside casing
Lost Returns with Mud Drop	Mud weight string was set in	Lost returns at intermediate casing point with brine
Cementing	Wet cement weight	Water (8.33 ppg)

Surface Casing Axial Design	
Load Case	Assumptions
Overpull	100 kips
Running in hole	2 ft/s
Green Cement Pressure Test	Max pressure when bumping plug
Service Loads	N/A

## **HYDROGEN SULFIDE (H<sub>2</sub>S) DRILLING OPERATIONS PLAN**

### **Hydrogen Sulfide Training:**

All regularly assigned personnel, contracted or employed by Apache Corporation will receive training from qualified instructor(s) in the following areas prior to commencing drilling possible hydrogen sulfide bearing formations in this well:

- The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S)
- The proper use and maintenance of personal protective equipment and life support systems.
- The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing area, evacuation procedures & prevailing winds.
- The proper techniques for first aid and rescue procedures.

### **Supervisory personnel will be trained in the following areas:**

- The effects of H<sub>2</sub>S on metal components. If high tensile tubulars are to be utilized, personnel will be trained in their special maintenance requirements.
- Corrective action & shut-in procedures when drilling or reworking a well & blowout prevention / well control procedures.
- The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500') and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received proper training.

## **H<sub>2</sub>S SAFETY EQUIPMENT AND SYSTEMS:**

### **Well Control Equipment that will be available & installed if H<sub>2</sub>S is encountered:**

- Flare Line with electronic igniter or continuous pilot.
- Choke manifold with a minimum of one remote choke.
- Blind rams & pipe rams to accommodate all pipe sizes with properly sized closing unit.
- Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head & flare gun with flares

### **Protective Equipment for Essential Personnel:**

- Mark II Survive-air 30 minute units located in dog house & at briefing areas, as indicated on wellsite diagram.

### **H<sub>2</sub>S Detection and Monitoring Equipment:**

- Two portable H<sub>2</sub>S monitors positioned on location for best coverage & response. These units have warning lights & audible sirens when H<sub>2</sub>S levels of 20 ppm are reached.
- One portable H<sub>2</sub>S monitor positioned near flare line.

### **H<sub>2</sub>S Visual Warning Systems:**

- Wind direction indicators are shown on wellsite diagram.
- Caution / Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

### **Mud Program:**

- The Mud Program has been designed to minimize the volume of H<sub>2</sub>S circulated to the surface. Proper mud weights, safe drilling practices & the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.
- A mud-gas separator and H<sub>2</sub>S gas buster will be utilized as needed.

### **Metallurgy:**

- All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold & lines, & valves will be suitable for H<sub>2</sub>S service.
- All elastomers used for packing & seals shall be H<sub>2</sub>S trim.

### **Communication:**

- Cellular telephone and 2-way radio communications in company vehicles, rig floor and mud logging trailer.



## HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN

**Assumed 100 ppm ROE = 3000'**

100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.

### Emergency Procedures

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operators and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the :
  - Detection of H<sub>2</sub>S, and
  - Measures for protection against the gas,
  - Equipment used for protection and emergency response.

### Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

### **Characteristics of H<sub>2</sub>S and SO<sub>2</sub>**

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air = 1	2 ppm	N/A	1000 ppm

### **Contacting Authorities**

Apache Corporation personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Apache's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

## WELL CONTROL EMERGENCY RESPONSE PLAN

### I. GENERAL PHILOSOPHY

Our objective is to ensure that during an emergency, a predetermined procedure is followed so that prompt decisions can be made based on accurate information.

The best way to handle an emergency is with an experienced organization set up for the sole purpose of solving the problem. The *Well Control Emergency Response Team* was organized to handle dangerous & expensive well control problems. The *Team* is structured such that each individual can contribute the most from his area of expertise. Key decision-makers are determined prior to an emergency to avoid confusion about who is in charge.

If the well is flowing uncontrolled at the surface or subsurface, *The Emergency Response Team* will be mobilized. The *Team* is customized for the people currently on the Apache staff. Staff changes may require a change in the plan.

### II. EMERGENCY PROCEDURE ON DRILLING OR COMPLETION OPERATIONS

- A. In the event of an emergency the *Drilling Foreman* or *Tool-Pusher* will immediately contact only one of the following starting with the first name listed:

Name	Office	Mobile	Home
Danny Laman – Drlg Superintendent	432-818-1022	432-634-0288	
John Vacek – Drilling Engineer	432-818-1882	281-222-1812	
Bobby Smith – Drilling Manager	432-818-1020	432-556-7701	
Bill Jones – EH&S Coordinator		432-967-9576	

*\*\*This one phone call will free the Drilling Foreman to devote his full time to securing the safety of personnel & equipment. This call will initiate the process to mobilize the Well Control Emergency Response Team. Apache maintains an Emergency Telephone Conference Room in the Houston office. This room is available for us by the Permian Region. The room has 50 separate telephone lines.*

- B. The Apache employee contacted by the Drilling Foreman will begin contacting the rest of the *Team*. If **DANNY LAMAN** is out of contact, **JOHN VACEK** will be notified.
- C. If a member of the *Emergency Response Team* is away from the job, he must be available for call back. Telephone numbers should be left with secretaries or a key decision-maker.
- D. Apache's reporting procedure for spills or releases of oil or hazardous materials will be implemented when spills or releases have occurred or are probable.

### EMERGENCY RESPONSE NUMBERS:

SHERIFF DEPARTMENT	
Eddy County	575-887-7551
Lea County	575-396-3611
FIRE DEPARTMENT	
	911
Artesia	575-746-5050
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359
HOSPITALS	
	911
Artesia Medical Emergency	575-746-5050
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359
AGENT NOTIFICATIONS	
Bureau of Land Management	575-393-3612
New Mexico Oil Conservation Division	575-393-6161

Lea County NM (NAD 83 NME)

Ghost Rider 22-15 Fed Com 602H

MD (ft)	Inc (Deg)	Azim. (Deg)	SSTVD (ft)	TVD (ft)	N/S (ft)	E/W (ft)	Y (ft)	X (ft)	DLS (dega/100ft)	V.S. (ft)	Comment
0	0	0	-3623	0	0 N	0 E	435947.2 N	749047.6 E	0	0	
100	0	0	-3523	100	0 N	0 E	435947.2 N	749047.6 E	0	0	MWD+IFR1+SAG+FDIR (1)
200	0	0	-3423	200	0 N	0 E	435947.2 N	749047.6 E	0	0	
300	0	0	-3323	300	0 N	0 E	435947.2 N	749047.6 E	0	0	
400	0	0	-3223	400	0 N	0 E	435947.2 N	749047.6 E	0	0	
500	0	0	-3123	500	0 N	0 E	435947.2 N	749047.6 E	0	0	
600	0	0	-3023	600	0 N	0 E	435947.2 N	749047.6 E	0	0	
700	0	0	-2923	700	0 N	0 E	435947.2 N	749047.6 E	0	0	
800	0	0	-2823	800	0 N	0 E	435947.2 N	749047.6 E	0	0	
900	0	0	-2723	900	0 N	0 E	435947.2 N	749047.6 E	0	0	
1000	0	0	-2623	1000	0 N	0 E	435947.2 N	749047.6 E	0	0	
1100	0	0	-2523	1100	0 N	0 E	435947.2 N	749047.6 E	0	0	
1200	0	0	-2423	1200	0 N	0 E	435947.2 N	749047.6 E	0	0	
1300	0	0	-2323	1300	0 N	0 E	435947.2 N	749047.6 E	0	0	
1400	0	0	-2223	1400	0 N	0 E	435947.2 N	749047.6 E	0	0	
1500	0	0	-2123	1500	0 N	0 E	435947.2 N	749047.6 E	0	0	
1600	2.5	133.659	-2023.032	1599.968	1.506 S	1.578 E	435945.7 N	749049.2 E	2.5	-1.418	
1700	5	133.659	-1923.254	1699.746	6.021 S	6.309 E	435941.2 N	749053.9 E	2.5	-5.669	
1733.84	5.846	133.659	-1889.565	1733.435	8.229 S	8.623 E	435939 N	749056.2 E	2.5	-7.748	
1800	5.846	133.659	-1823.75	1799.25	12.881 S	13.498 E	435934.3 N	749061.1 E	0	-12.128	
1900	5.846	133.659	-1724.27	1898.73	19.913 S	20.867 E	435927.3 N	749068.5 E	0	-18.749	
2000	5.846	133.659	-1624.79	1998.21	26.944 S	28.236 E	435920.3 N	749075.8 E	0	-25.37	
2100	5.846	133.659	-1525.31	2097.69	33.976 S	35.605 E	435913.2 N	749083.2 E	0	-31.991	
2200	5.846	133.659	-1425.83	2197.17	41.008 S	42.974 E	435906.2 N	749090.6 E	0	-38.612	
2300	5.846	133.659	-1326.35	2296.65	48.04 S	50.343 E	435899.2 N	749097.9 E	0	-45.233	
2400	5.846	133.659	-1226.87	2396.13	55.071 S	57.711 E	435892.1 N	749105.3 E	0	-51.854	
2500	5.846	133.659	-1127.39	2495.61	62.103 S	65.08 E	435885.1 N	749112.7 E	0	-58.475	
2600	5.846	133.659	-1027.91	2595.09	69.135 S	72.449 E	435878.1 N	749120 E	0	-65.096	
2700	5.846	133.659	-928.43	2694.57	76.166 S	79.818 E	435871 N	749127.4 E	0	-71.717	
2800	5.846	133.659	-828.95	2794.05	83.198 S	87.187 E	435864 N	749134.8 E	0	-78.338	
2900	5.846	133.659	-729.47	2893.53	90.23 S	94.556 E	435857 N	749142.2 E	0	-84.959	
3000	5.846	133.659	-629.991	2993.009	97.262 S	101.924 E	435849.9 N	749149.5 E	0	-91.58	
3100	5.846	133.659	-530.511	3092.489	104.293 S	109.293 E	435842.9 N	749156.9 E	0	-98.201	
3200	5.846	133.659	-431.031	3191.969	111.325 S	116.662 E	435835.9 N	749164.3 E	0	-104.822	
3300	5.846	133.659	-331.551	3291.449	118.357 S	124.031 E	435828.8 N	749171.6 E	0	-111.443	
3400	5.846	133.659	-232.071	3390.929	125.389 S	131.4 E	435821.8 N	749179 E	0	-118.064	
3500	5.846	133.659	-132.591	3490.409	132.42 S	138.769 E	435814.8 N	749186.4 E	0	-124.685	
3600	5.846	133.659	-33.111	3589.889	139.452 S	146.137 E	435807.7 N	749193.7 E	0	-131.306	
3700	5.846	133.659	66.369	3689.369	146.484 S	153.506 E	435800.7 N	749201.1 E	0	-137.927	
3800	5.846	133.659	165.849	3788.849	153.516 S	160.875 E	435793.7 N	749208.5 E	0	-144.548	
3900	5.846	133.659	265.329	3888.329	160.547 S	168.244 E	435786.7 N	749215.8 E	0	-151.169	
4000	5.846	133.659	364.809	3987.809	167.579 S	175.613 E	435779.6 N	749223.2 E	0	-157.79	
4100	5.846	133.659	464.289	4087.289	174.611 S	182.982 E	435772.6 N	749230.6 E	0	-164.411	
4200	5.846	133.659	563.769	4186.769	181.642 S	190.351 E	435765.6 N	749238 E	0	-171.032	
4300	5.846	133.659	663.248	4286.248	188.674 S	197.719 E	435758.5 N	749245.3 E	0	-177.653	
4400	5.846	133.659	762.728	4385.728	195.706 S	205.088 E	435751.5 N	749252.7 E	0	-184.274	
4500	5.846	133.659	862.208	4485.208	202.738 S	212.457 E	435744.5 N	749260.1 E	0	-190.895	
4600	5.846	133.659	961.688	4584.688	209.769 S	219.826 E	435737.4 N	749267.4 E	0	-197.516	
4700	5.846	133.659	1061.168	4684.168	216.801 S	227.195 E	435730.4 N	749274.8 E	0	-204.137	
4800	5.846	133.659	1160.648	4783.648	223.833 S	234.564 E	435723.4 N	749282.2 E	0	-210.758	
4900	5.846	133.659	1260.128	4883.128	230.865 S	241.932 E	435716.3 N	749289.5 E	0	-217.379	
5000	5.846	133.659	1359.608	4982.608	237.896 S	249.301 E	435709.3 N	749296.9 E	0	-224	
5100	5.846	133.659	1459.088	5082.088	244.928 S	256.67 E	435702.3 N	749304.3 E	0	-230.621	
5200	5.846	133.659	1558.568	5181.568	251.96 S	264.039 E	435695.2 N	749311.6 E	0	-237.242	
5300	5.846	133.659	1658.048	5281.048	258.992 S	271.408 E	435688.2 N	749319 E	0	-243.863	
5400	5.846	133.659	1757.528	5380.528	266.023 S	278.777 E	435681.2 N	749326.4 E	0	-250.484	
5500	5.846	133.659	1857.008	5480.008	273.055 S	286.145 E	435674.1 N	749333.7 E	0	-257.105	
5536.596	5.846	133.659	1893.413	5516.413	275.628 S	288.842 E	435671.6 N	749336.4 E	0	-259.528	
5600	5.212	133.659	1956.522	5579.522	279.846 S	293.262 E	435667.4 N	749340.9 E	1	-263.499	
5700	4.212	133.659	2056.183	5679.183	285.517 S	299.205 E	435661.7 N	749346.8 E	1	-268.839	
5800	3.212	133.659	2155.972	5778.972	289.986 S	303.888 E	435657.2 N	749351.5 E	1	-273.047	
5900	2.212	133.659	2255.858	5878.858	293.253 S	307.311 E	435653.9 N	749354.9 E	1	-276.123	
6000	1.212	133.659	2355.812	5978.812	295.315 S	309.473 E	435651.9 N	749357.1 E	1	-278.065	
6100	0.212	133.659	2455.803	6078.803	296.173 S	310.372 E	435651 N	749358 E	1	-278.873	
6121.197	0	0	2477	6100	296.2 S	310.4 E	435651 N	749358 E	1	-278.898	
6200	0	0	2555.803	6178.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898	
6300	0	0	2655.803	6278.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898	
6400	0	0	2755.803	6378.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898	
6500	0	0	2855.803	6478.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898	
6600	0	0	2955.803	6578.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898	
6700	0	0	3055.803	6678.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898	

6800	0	0	3155.803	6778.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
6900	0	0	3255.803	6878.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7000	0	0	3355.803	6978.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7100	0	0	3455.803	7078.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7200	0	0	3555.803	7178.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7300	0	0	3655.803	7278.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7400	0	0	3755.803	7378.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7500	0	0	3855.803	7478.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7600	0	0	3955.803	7578.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7700	0	0	4055.803	7678.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7800	0	0	4155.803	7778.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
7900	0	0	4255.803	7878.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8000	0	0	4355.803	7978.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8100	0	0	4455.803	8078.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8200	0	0	4555.803	8178.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8300	0	0	4655.803	8278.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8400	0	0	4755.803	8378.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8500	0	0	4855.803	8478.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8600	0	0	4955.803	8578.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8700	0	0	5055.803	8678.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8800	0	0	5155.803	8778.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
8900	0	0	5255.803	8878.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9000	0	0	5355.803	8978.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9100	0	0	5455.803	9078.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9200	0	0	5555.803	9178.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9300	0	0	5655.803	9278.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9400	0	0	5755.803	9378.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9500	0	0	5855.803	9478.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9600	0	0	5955.803	9578.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9700	0	0	6055.803	9678.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9800	0	0	6155.803	9778.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
9900	0	0	6255.803	9878.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10000	0	0	6355.803	9978.803	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10100	0	0	6455.803	10078.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10200	0	0	6555.803	10178.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10300	0	0	6655.803	10278.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10400	0	0	6755.803	10378.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10500	0	0	6855.803	10478.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10600	0	0	6955.803	10578.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10700	0	0	7055.803	10678.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10800	0	0	7155.803	10778.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
10900	0	0	7255.803	10878.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11000	0	0	7355.803	10978.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11100	0	0	7455.803	11078.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11200	0	0	7555.803	11178.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11300	0	0	7655.803	11278.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11400	0	0	7755.803	11378.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11500	0	0	7855.803	11478.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11600	0	0	7955.803	11578.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11700	0	0	8055.803	11678.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11800	0	0	8155.803	11778.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
11900	0	0	8255.803	11878.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
12000	0	0	8355.803	11978.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
12100	0	0	8455.803	12078.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
12200	0	0	8555.803	12178.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
12300	0	0	8655.803	12278.8	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
12326.2	0	0	8682	12305	296.2 S	310.4 E	435651 N	749358 E	0	-278.898
12350	2.38	9.09	8705.797	12328.8	295.712 S	310.478 E	435651.5 N	749358.1 E	10	-278.407
12400	7.38	9.09	8755.599	12378.6	291.513 S	311.15 E	435655.7 N	749358.8 E	10	-274.177
12450	12.38	9.09	8804.842	12427.84	283.044 S	312.505 E	435664.2 N	749360.1 E	10	-265.647
12500	17.38	9.09	8853.15	12476.15	270.369 S	314.533 E	435676.8 N	749362.1 E	10	-252.881
12550	22.38	9.09	8900.155	12523.16	253.585 S	317.218 E	435693.6 N	749364.8 E	10	-235.976
12600	27.38	9.09	8945.5	12568.5	232.819 S	320.541 E	435714.4 N	749368.1 E	10	-215.06
12650	32.38	9.09	8988.84	12611.84	208.23 S	324.475 E	435739 N	749372.1 E	10	-190.294
12700	37.38	9.09	9029.844	12652.84	180.005 S	328.991 E	435767.2 N	749376.6 E	10	-161.865
12750	42.38	9.09	9068.201	12691.2	148.359 S	334.054 E	435798.8 N	749381.7 E	10	-129.99
12800	47.38	9.09	9103.619	12726.62	113.531 S	339.626 E	435833.7 N	749387.2 E	10	-94.911
12811.34	48.514	9.09	9111.212	12734.21	105.22 S	340.956 E	435842 N	749388.6 E	10	-86.54 FTP_GR602H
12850	52.38	9.09	9135.828	12758.83	75.788 S	345.665 E	435871.4 N	749393.3 E	10	-56.896
12900	57.38	9.09	9164.583	12787.58	35.417 S	352.124 E	435911.8 N	749399.7 E	10	-16.234
12950	62.38	9.09	9189.666	12812.67	7.275 N	358.955 E	435954.5 N	749406.6 E	10	26.767
13000	67.38	9.09	9210.884	12833.88	51.964 N	366.104 E	435999.2 N	749413.7 E	10	71.778
13050	72.38	9.09	9228.078	12851.08	98.308 N	373.519 E	436045.5 N	749421.1 E	10	118.457
13100	77.38	9.09	9241.115	12864.12	145.956 N	381.143 E	436093.2 N	749428.7 E	10	166.448
13150	82.381	9.09	9249.898	12872.9	194.545 N	388.917 E	436141.7 N	749436.5 E	10	215.387
13200	87.381	9.09	9254.358	12877.36	243.704 N	396.782 E	436190.9 N	749444.4 E	10	264.902

13226.2	90	9.09	9254.957	12877.96	269.561 N	400.919 E	436216.8 N	749448.5 E	10	290.945
13300	90	7.983	9254.957	12877.96	342.548 N	411.874 E	436289.7 N	749459.5 E	1.5	364.419
13400	90	6.483	9254.957	12877.96	441.749 N	424.464 E	436388.9 N	749472.1 E	1.5	464.158
13500	90	4.983	9254.957	12877.96	541.246 N	434.453 E	436488.4 N	749482.1 E	1.5	564.051
13600	90	3.483	9254.957	12877.96	640.97 N	441.834 E	436588.2 N	749489.4 E	1.5	664.029
13700	90	1.983	9254.957	12877.96	740.854 N	446.602 E	436688.1 N	749494.2 E	1.5	764.024
13800	90	0.483	9254.957	12877.96	840.828 N	448.754 E	436788 N	749496.4 E	1.5	863.967
13854.19	90	359.67	9254.957	12877.96	895.021 N	448.826 E	436842.2 N	749496.4 E	1.5	918.084
13900	90	359.67	9254.957	12877.96	940.826 N	448.562 E	436888 N	749496.2 E	0	963.807
14000	90	359.67	9254.957	12877.96	1040.825 N	447.986 E	436988 N	749495.6 E	0	1063.627
14100	90	359.67	9254.957	12877.96	1140.823 N	447.41 E	437088 N	749495 E	0	1163.446
14200	90	359.67	9254.957	12877.96	1240.821 N	446.834 E	437188 N	749494.4 E	0	1263.266
14300	90	359.67	9254.957	12877.96	1340.82 N	446.258 E	437288 N	749493.9 E	0	1363.085
14400	90	359.67	9254.957	12877.96	1440.818 N	445.682 E	437388 N	749493.3 E	0	1462.904
14500	90	359.67	9254.957	12877.96	1540.816 N	445.106 E	437488 N	749492.7 E	0	1562.724
14600	90	359.67	9254.957	12877.96	1640.815 N	444.53 E	437588 N	749492.1 E	0	1662.543
14700	90	359.67	9254.957	12877.96	1740.813 N	443.954 E	437688 N	749491.6 E	0	1762.362
14800	90	359.67	9254.957	12877.96	1840.812 N	443.378 E	437788 N	749491 E	0	1862.182
14900	90	359.67	9254.957	12877.96	1940.81 N	442.802 E	437888 N	749490.4 E	0	1962.001
15000	90	359.67	9254.957	12877.96	2040.808 N	442.227 E	437988 N	749489.8 E	0	2061.82
15100	90	359.67	9254.957	12877.96	2140.807 N	441.651 E	438088 N	749489.3 E	0	2161.64
15200	90	359.67	9254.957	12877.96	2240.805 N	441.075 E	438188 N	749488.7 E	0	2261.459
15300	90	359.67	9254.957	12877.96	2340.803 N	440.499 E	438288 N	749488.1 E	0	2361.278
15400	90	359.67	9254.957	12877.96	2440.802 N	439.923 E	438388 N	749487.5 E	0	2461.098
15500	90	359.67	9254.957	12877.96	2540.8 N	439.347 E	438488 N	749486.9 E	0	2560.917
15600	90	359.67	9254.957	12877.96	2640.798 N	438.771 E	438588 N	749486.4 E	0	2660.736
15700	90	359.67	9254.957	12877.96	2740.797 N	438.195 E	438688 N	749485.8 E	0	2760.556
15800	90	359.67	9254.957	12877.96	2840.795 N	437.619 E	438788 N	749485.2 E	0	2860.375
15900	90	359.67	9254.957	12877.96	2940.793 N	437.043 E	438888 N	749484.6 E	0	2960.195
16000	90	359.67	9254.957	12877.96	3040.792 N	436.467 E	438988 N	749484.1 E	0	3060.014
16100	90	359.67	9254.957	12877.96	3140.79 N	435.891 E	439088 N	749483.5 E	0	3159.833
16200	90	359.67	9254.957	12877.96	3240.788 N	435.315 E	439188 N	749482.9 E	0	3259.653
16300	90	359.67	9254.957	12877.96	3340.787 N	434.739 E	439288 N	749482.3 E	0	3359.472
16400	90	359.67	9254.957	12877.96	3440.785 N	434.163 E	439388 N	749481.8 E	0	3459.291
16500	90	359.67	9254.957	12877.96	3540.783 N	433.587 E	439488 N	749481.2 E	0	3559.111
16600	90	359.67	9254.957	12877.96	3640.782 N	433.011 E	439588 N	749480.6 E	0	3658.93
16700	90	359.67	9254.957	12877.96	3740.78 N	432.435 E	439688 N	749480 E	0	3758.749
16800	90	359.67	9254.957	12877.96	3840.778 N	431.859 E	439788 N	749479.5 E	0	3858.569
16900	90	359.67	9254.957	12877.96	3940.777 N	431.283 E	439888 N	749478.9 E	0	3958.388
17000	90	359.67	9254.957	12877.96	4040.775 N	430.707 E	439988 N	749478.3 E	0	4058.207
17100	90	359.67	9254.957	12877.96	4140.773 N	430.131 E	440088 N	749477.7 E	0	4158.027
17200	90	359.67	9254.957	12877.96	4240.772 N	429.556 E	440188 N	749477.2 E	0	4257.846
17300	90	359.67	9254.957	12877.96	4340.77 N	428.98 E	440288 N	749476.6 E	0	4357.665
17400	90	359.67	9254.957	12877.96	4440.768 N	428.404 E	440388 N	749476 E	0	4457.485
17500	90	359.67	9254.957	12877.96	4540.767 N	427.828 E	440488 N	749475.4 E	0	4557.304
17600	90	359.67	9254.957	12877.96	4640.765 N	427.252 E	440588 N	749474.9 E	0	4657.124
17700	90	359.67	9254.957	12877.96	4740.763 N	426.676 E	440688 N	749474.3 E	0	4756.943
17800	90	359.67	9254.957	12877.96	4840.762 N	426.1 E	440788 N	749473.7 E	0	4856.762
17900	90	359.67	9254.957	12877.96	4940.76 N	425.524 E	440888 N	749473.1 E	0	4956.582
18000	90	359.67	9254.957	12877.96	5040.758 N	424.948 E	440988 N	749472.5 E	0	5056.401
18100	90	359.67	9254.957	12877.96	5140.757 N	424.372 E	441088 N	749472 E	0	5156.22
18200	90	359.67	9254.957	12877.96	5240.755 N	423.796 E	441188 N	749471.4 E	0	5256.04
18300	90	359.67	9254.957	12877.96	5340.753 N	423.22 E	441288 N	749470.8 E	0	5355.859
18400	90	359.67	9254.957	12877.96	5440.752 N	422.644 E	441388 N	749470.2 E	0	5455.678
18500	90	359.67	9254.957	12877.96	5540.75 N	422.068 E	441488 N	749469.7 E	0	5555.498
18600	90	359.67	9254.957	12877.96	5640.748 N	421.492 E	441587.9 N	749469.1 E	0	5655.317
18700	90	359.67	9254.957	12877.96	5740.747 N	420.916 E	441687.9 N	749468.5 E	0	5755.136
18800	90	359.67	9254.957	12877.96	5840.745 N	420.34 E	441787.9 N	749467.9 E	0	5854.956
18900	90	359.67	9254.957	12877.96	5940.744 N	419.764 E	441887.9 N	749467.4 E	0	5954.775
19000	90	359.67	9254.957	12877.96	6040.742 N	419.188 E	441987.9 N	749466.8 E	0	6054.594
19100	90	359.67	9254.957	12877.96	6140.74 N	418.612 E	442087.9 N	749466.2 E	0	6154.414
19200	90	359.67	9254.957	12877.96	6240.739 N	418.036 E	442187.9 N	749465.6 E	0	6254.233
19300	90	359.67	9254.957	12877.96	6340.737 N	417.46 E	442287.9 N	749465.1 E	0	6354.052
19400	90	359.67	9254.957	12877.96	6440.735 N	416.884 E	442387.9 N	749464.5 E	0	6453.872
19500	90	359.67	9254.957	12877.96	6540.734 N	416.309 E	442487.9 N	749463.9 E	0	6553.691
19600	90	359.67	9254.957	12877.96	6640.732 N	415.733 E	442587.9 N	749463.3 E	0	6653.511
19700	90	359.67	9254.957	12877.96	6740.73 N	415.157 E	442687.9 N	749462.8 E	0	6753.33
19800	90	359.67	9254.957	12877.96	6840.729 N	414.581 E	442787.9 N	749462.2 E	0	6853.149
19900	90	359.67	9254.957	12877.96	6940.727 N	414.005 E	442887.9 N	749461.6 E	0	6952.969
20000	90	359.67	9254.957	12877.96	7040.725 N	413.429 E	442987.9 N	749461 E	0	7052.788
20100	90	359.67	9254.957	12877.96	7140.724 N	412.853 E	443087.9 N	749460.5 E	0	7152.607
20200	90	359.67	9254.957	12877.96	7240.722 N	412.277 E	443187.9 N	749459.9 E	0	7252.427
20300	90	359.67	9254.957	12877.96	7340.72 N	411.701 E	443287.9 N	749459.3 E	0	7352.246
20400	90	359.67	9254.957	12877.96	7440.719 N	411.125 E	443387.9 N	749458.7 E	0	7452.065
20501.88	90	359.67	9255	12878	7542.6 N	410.4 E	443489.8 N	749458 E	0	7553.757 BHL_GR602H



Apache Corp respectfully requests approval for the following changes and additions to the drilling plan:

1. Utilize a spudder rig to pre-set surface casing.
2. Description of Operations
  1. Spudder rig will move in their rig to drill the surface hole section and pre-set surface casing on the first wells.
    - a. After drilling the surface hole section, the rig will run casing and cement following all of the applicable rules and regulations (Onshore Oil and Gas Order No. 2).
    - b. Rig will utilize fresh water based mud to drill 17-1/2" surface hole to TD. Solids control will be handled entirely on a closed loop basis.
  3. The wellhead will be installed and tested once the 13-3/8" surface casing is cut off and the WOC time has been reached.
  4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
    - a. A means for intervention will be maintained while the drilling rig is not over the well.
  5. Spudder rig operations is expected to take 1-2 days on a single well pad.
  6. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
  7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
    - a. The BLM will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.
  8. Apache Corp will have supervision over the rig to ensure compliance with all BLM regulations and to oversee operations.
  9. Once the rig is removed, Apache Corp will secure the wellhead area by placing a guard rail around the cellar area.

## DRILLING PLAN: BLM COMPLIANCE

Ghost Rider 22-15 Fed Com 602H  
 Projected TD: 20482' K11MD / 12878' TVD  
 SHL: 367' FSL & 2151' FWL , Section 22, T24S, R32E  
 BHL: 2540' FSL & 2630' FEL , Section 15, T24S, R32E  
 Lea County, NM

## 1. Geologic Name of Surface Formation

A. Permian

## 2. Estimated Tops of Geological Markers &amp; Depths of Anticipated Fresh Water, Oil or Gas

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	1039'	
Salado	1364'	
Castile	4100'	Oil
Delaware	4615'	Oil
Cherry Canyon	5640'	Oil
Brushy Canyon	7552'	Oil
Bone Spring	8775'	Oil
Avalon	8953'	Oil
1st Bone Spring Sand	9882'	Oil
1st Bone Spring Carb	10110'	Oil
2nd Bone Spring Sand	10515'	Oil
3rd Bone Spring Carb	10991'	Oil
3rd Bone Spring Sand	11798'	Oil
Wolfcamp	12085'	Oil
Wolfcamp A	12272'	Oil
Wolfcamp B	12704'	Oil
Target/Land Curve	12877'	Oil

\*\*\* Hydrocarbons @ Brushy Canyon

\*\*\* Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13.375 casing @ 1089' (275' above the salt) and circulating cement back to surface. The 7.625 intermediate casing will be set at 11691' and bring TOC back to surface. An 6.75 inch curve and an 6.75 inch lateral hole will be drilled to MD/TD and 5.5 semi-premium x 5.5 Semi-flush casing will be set at TD and cemented back a minimum of 200' into the 7.625 casing shoe.

## 3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension (B)
17 1/2	0' – 1089'	13 3/8	54.5	BTC	J-55	New	1.00	2.00	14.37
9 7/8	0' – 11691'	7 5/8	29.7	BTC	HCL-80	New	1.17	2.58	1.97
6 3/4	0' – 13226'	5 1/2	20	semi-premium	CYP-110	New	1.26	1.40	2.03
6 3/4	13226' - 20482'	5 1/2	20	Semi-flush	CYP-110	New	1.26	1.28	1.75

- Apache Corporation requests to not utilize centralizers in the curve and lateral
- 7.625" Collapse analyzed using 50% evacuation based on regional experience
- 5.5" Tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35
- Test on Casing will be limited to 70% burst of the casing or 1500 psi, whichever is less
- 5.5", 20 ppf, semi-premium casing will be run from surface to 11491 and crossed over to 5.5", 20 ppf, Semi-flush casing from 11491 to TD.
- Request to use 5" BTC Float equipment for the the production casing

## Wellhead:

Permanent Wellhead – Multibowl System

A. Starting Head: 13-5/8" 10M top flange x 13-3/8" 10M SOW/BTC bottom

B. Tubing Head: 13-5/8" 10M bottom flange x 7-1/16" 10M top flange

- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Operator will test the 7.625" casing per BLM Onshore Order 2
- Wellhead Manufacturer representative will not be present for BOP test plug installation



#### 4. Cement Program

**Surface Casing: 13.375, 54.5 New J-55, BTC casing to be set at +/- 1089'**

**TOC: Surface**

Lead: 620 sxs Class - C, 5% Sodium chloride & 0.35% metasilicate (mixed at 13.5 ppg, 1.72 ft3/sx, 9.02 gal/sx water)

**TOC: 789'**

Tail: 200 sxs Class - C, 0.003 gal/sx Foam preventer & 0.25% sodium metasilicate (mixed at 14.8 ppg, 1.34 ft3/sx, 6.36 gal/sx water)

**Intermediate Casing: 7.625, 29.7 New HCL-80, BTC casing to be set at +/- 11691'**

*If deemed necessary for operations, a DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe.*

*The DV tool depth(s) will be adjusted on hole conditions & cement volumes will be adjusted proportionally.*

*A DVT may be used in the 7.625 csg & ECP may be placed below DVT. ECP/DV Tool to be set at 7552*

##### 1st Stage

**TOC: Surface**

Lead: 600 sxs Class - C, 0.2% Anti-foam & 0.55% retarder (mixed at 11.3 ppg, 2.76 ft3/sx, 15.93 gal/sx water)

**TOC: 11391'**

Tail: 60 sxs Class - H, 0.1% Fluid loss, 0.2% retarder, & 0.2% anti-foam (mixed at 14.8 ppg, 1.34 ft3/sx, 6.36 gal/sx water)

##### 2nd Stage / Squeeze

**TOC: Surface**

Lead: 1220 sxs Class - , (mixed at ppg, ft3/sx, gal/sx water)

Per meeting on 4/7/2022, Apache requests to pump a two-stage cement job on the intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon / surface and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. The final cement top after the second stage job will be verified by an Echometer. If necessary, a top out job will be executed as a contingency to meet regulatory requirements. If cement is still not meeting the objective, then another Echometer will be performed for the cement top verification.

Apache will include the Echometer verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.

Apache will report to the BLM the volume of fluid (limited to 5 bbl.) used to flush intermediate casing valves following the backside cementing procedures.

Apache requests to pump an optional lead if well conditions dictate to bring cement to surface on the first stage. If cement is brought to surface, the BLM will be notified and the second stage bradenhead squeeze and subsequent TOC verification will be negated.

In the event cement is not circulate to surface on the first stage offline, whether intentionally or unintentionally, Apache requests the option to conduct the bradenhead squeeze and TOC verification offline as per standard approval from BLM when unplanned remediate is needed and batch drilling is approved. In the event the bradenhead is conducted, we will ensure first stage cement job is cemented properly and the well is static with floats holding and no pressure on the casing annulus as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed per wellhead manufacture procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling operations.

**Production Casing: 5.5, 20 New CYP-110, casing to be set at +/- 20482'**

**TOC: 11491' Inside previous casing shoe: 200'**

Lead: 31 sxs Class - C, 0.2%Anti-foam & 0.45% retarder (mixed at 11.5 ppg, 2.59 ft3/sx, 14.62 gal/sx water)

**TOC: 12326'**

Tail: 520 sxs Class - H, 0.2% Anti-foam & 0.4% fluid loss (mixed at 13.2 ppg, 1.53 ft3/sx, 7.2 gal/sx water)

## 5. Pressure Control Equipment

Once the permanent WH is installed on the 13.375 casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 3M Hydril and a 13-5/8" minimum 10M 3-Ram BOP. MASP should not exceed 2717 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 70% of the working pressure. When nipping up on the 13.375, 10M bradenhead and flange, the BOP test will be limited to 10000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 10M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested at a minimum every 7 days.

Equipment will consist of rotating head, mud gas separator, blowdown pit (panic line) and flare line just to name a few.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	<input checked="" type="checkbox"/>	Tested to:
9.875"	13-5/8"	5M	Annular	x	70% of working pressure
			Blind Ram	x	5M
			Pipe Ram	x	
			Double Ram	x	
6.75" - 6.75"	13-5/8"	10M	Annular	x	70% of working pressure
			Blind Ram	x	10M
			Pipe Ram	x	
			Double Ram	x	

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. The manufacture does not require anchors.

In any instance where 10M BOP is required by BLM, Apache requests a variance to utilize 5M annular with 10M ram preventers (a common BOP configuration, which allows use of 10M rams in unlikely event that pressures exceed 5M). Also a variance is requested to test the 5M annular to 70% of working pressure at 3500 psi.

Per meeting on 4/7/2022, Apache requests a variance to be able to batch drill this well if necessary. In doing so, Apache will set each casing string and ensure that the well is cemented properly and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a TA cap as per wellhead recommendations, Apache will contact the BLM on each rig skid on the pad. Once surface and intermediate strings are all completed.

Per meeting on 4/7/2022, A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API standard 53 states, that for pad drilling operation, moving from one wellhead to another within 30 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. We will also function test BOP equipment after each nipple up. A full BOP test will be required prior to drilling the 1st production hole and every 30 days after.

## 6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 1089'	17.5	FW / Native (Spud mud)	9.3 - 10.5	32-40	NC
1089' - 11691'	9.875	Brine / Cut Brine / Direct Emulsion	8 - 9.2	28-32	NC
11691' - 20482'	6.75 - 6.75	Cut Brine / WBM / OBM	12.3 - 13.5	28-36	NC

The necessary mud products for weight addition and fluid loss control will be on location at all times.

The mud system type will be;

**Closed**

Will an air gas system be used;

**No**

Spud with fresh water/native mud and set 13.375 surface casing, isolating the fresh water aquifer. Drill out from under 13.375 surface casing with a brine/oil direct emulsion mud system. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up.

A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up.

Rig up solids control equipment to operate as a closed loop system

## 7. Auxiliary Well Control and Monitoring Equipment

- An upper kelly valve will be used for the drill string at all times.
- A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- H2S monitors will be on location when drilling below the 13.375 casing.

**8. Logging, Coring and Testing Program**

Mud Logger: Mud Logging Unit (2 man) below intermediate casing.

Will run GR/CNL from TD to surf (horizontal well - vertical portion of hole). Stated logs run will be in the completion report & submitted to BLM.

No coring planned

Open & cased hole logs run in well:

<input type="checkbox"/> CALIPER	<input type="checkbox"/> CEMENT BOND LOG	<input type="checkbox"/> CNL (Neutron log) /FDC (Formation Density log)
<input type="checkbox"/> COMPENSATED DENSLOG	<input type="checkbox"/> COMPENSATED NEUTRON LOG	<input type="checkbox"/> COMPUTER GENERATED LOG
<input type="checkbox"/> DIP METER LOG	<input checked="" type="checkbox"/> DIRECTIONAL SURVEY	<input type="checkbox"/> DUAL INDUCTION/MICRO-RESISTIVITY
<input type="checkbox"/> DUAL LATERAL LOG/MICRO-SPHERICALLY FOCUSED	<input type="checkbox"/> ELECTRIC LOG	<input type="checkbox"/> FORMATION DENSITY COMPENSATED LOG
<input checked="" type="checkbox"/> GAMMA RAY LOG	<input checked="" type="checkbox"/> MEASUREMENT WHILE DRILLING POROSITY-RESISTIVITY LOG	<input checked="" type="checkbox"/> MUD LOG/GEOLOGIC LITHOLOGY LOG
<input type="checkbox"/> OTHER	<input type="checkbox"/> SPONTANEOUS POTENTIAL LOG	<input type="checkbox"/> SIDEWALL NEUTRON LOG
<input type="checkbox"/> SONIC LOG		<input type="checkbox"/> TEMPERATURE LOG

**9. Abnormal Pressures and Temperatures / Potential Hazards**

BHT of 140 to 160 F is anticipated.

No H<sub>2</sub>S is expected but monitors will be in place to detect any H<sub>2</sub>S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment.

Lost circulation could occur but is not expected and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well during the production section is 8705 psi.

**No** Anticipated abnormal pressures, temps, or potential geological hazards.

**10. Anticipated Starting Date and Duration of Operations**

Road and location construction will begin after BLM have approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 45 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.



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

## SUPO Data Report

05/13/2024

APD ID: 10400095263

Submission Date: 11/08/2023

Highlighted data  
reflects the most  
recent changes  
[Show Final Text](#)

Operator Name: APACHE CORPORATION

Well Name: GHOST RIDER 22 15 FEDERAL COM

Well Number: 602H

Well Type: OIL WELL

Well Work Type: Drill

### Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

GhostRider22\_15FedCom\_ExistingRoads\_20231012145522.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

**ROW ID(s)**

ID:

Do the existing roads need to be improved? YES

**Existing Road Improvement Description:** If road improvements are needed, caliche from nearest available pit will be used to patch, blade, water and roll. Caliche pit location: 32 13'17"N 103 39'53"W

**Existing Road Improvement Attachment:**

### Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

### Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H

GhostRider22\_15FedCom602H\_ExistingWells\_1MiRadius\_20240213144430.pdf

## Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** 1 emulsion; 1 gas line, approx 570' in length, will be installed and buried on pad. Lines will connect to existing header that was installed in 2019 for future growth. From header, existing lines follow existing corridor to satellite, East of Pad 2. Lines are rated as follows: 4" Flexsteel emulsion and gas flowlines rated 750 psig working pressure and 350psig operating pressure. No new surface disturbance. The proposed lines do not cross lease boundaries, so a ROW will not need to be acquired from BLM.

**Production Facilities map:**

GhostRider600Wells\_ExistingFLandNewFL\_REV\_4.1.24\_20240410082031.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source type:** OTHER**Describe type:** Brine/Direct emulsion**Water source use type:** INTERMEDIATE/PRODUCTION  
CASING**Source latitude:** 32.650583**Source longitude:** -103.78188**Source datum:** NAD83**Water source permit type:** PRIVATE CONTRACT**Water source transport method:** TRUCKING**Source land ownership:** FEDERAL**Source transportation land ownership:** STATE**Water source volume (barrels):** 3000**Source volume (acre-feet):** 0.38668014**Source volume (gal):** 126000**Water source type:** RECYCLED**Water source use type:** DUST CONTROL  
SURFACE CASING  
INTERMEDIATE/PRODUCTION  
CASING**Source latitude:** 32.627549**Source longitude:** -103.674627

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H

DUST CONTROL

SURFACE CASING

INTERMEDIATE/PRODUCTION  
CASING**Source datum:** NAD83**Water source permit type:** PRIVATE CONTRACT**Water source transport method:** TRUCKING**Source land ownership:** PRIVATE**Source transportation land ownership:** STATE**Water source volume (barrels):** 2476.190476**Source volume (acre-feet):** 0.31916456**Source volume (gal):** 104000**Water source and transportation**

GhostRider22\_15FedCom\_WaterSource\_20231012150736.pdf

**Water source comments:****New water well?** N**New Water Well Info****Well latitude:****Well Longitude:****Well datum:****Well target aquifer:****Est. depth to top of aquifer(ft):****Est thickness of aquifer:****Aquifer comments:****Aquifer documentation:****Well depth (ft):****Well casing type:****Well casing outside diameter (in.):****Well casing inside diameter (in.):****New water well casing?****Used casing source:****Drilling method:****Drill material:****Grout material:****Grout depth:****Casing length (ft.):****Casing top depth (ft.):****Well Production type:****Completion Method:****Water well additional information:****State appropriation permit:**

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H**Additional information attachment:**

### Section 6 - Construction Materials

**Using any construction materials:** YES**Construction Materials description:** Caliche from nearby pit will be used for road improvement: 32 13' 17"N 103 39' 53"W**Construction Materials source location**

GhostRider22\_15FedCom\_CalichePitLoc\_20240410073125.pdf

### Section 7 - Methods for Handling

**Waste type:** DRILLING**Waste content description:** Excess cement returns**Amount of waste:** 40 barrels**Waste disposal frequency :** Weekly**Safe containment description:** Cement returns will be stored in steel roll off bins then transferred to disposal vacuum trucks**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE**Disposal type description:** Haul to private facility**Disposal location description:** R360, 6601 W Hobbs Hwy, Carlsbad, NM 88220**Waste type:** DRILLING**Waste content description:** Drilling fluid from well, during drilling operations, will be stored safely and recycled to next well. Any excess will be hauled to approved NMOCD disposal facility**Amount of waste:** 5000 barrels**Waste disposal frequency :** One Time Only**Safe containment description:** Drilling fluids will be stored in sealed frac tanks**Safe containmant attachment:****Waste disposal type:** RECYCLE **Disposal location ownership:** OTHER**Disposal type description:****Disposal location description:** Operators next well**Waste type:** SEWAGE**Waste content description:** Human waste & grey water will be properly contained & disposed of at a state approved disposal facility**Amount of waste:** 2000 gallons**Waste disposal frequency :** Weekly**Safe containment description:** Sewage will be store din steel waste tanks**Safe containmant attachment:**



**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H**Waste disposal type:** HAUL TO COMMERCIAL FACILITY      **Disposal location ownership:** OTHER**Disposal type description:** muni**Disposal location description:** Hobbs Municipal Waste facility**Waste type:** GARBAGE**Waste content description:** Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of at a state approved disposal facility. All trash on and around well site will be collected for disposal**Amount of waste:** 1500                  gallons**Waste disposal frequency :** Weekly**Safe containment description:** Garbage will be disposed of in portable trash trailers**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY      **Disposal location ownership:** STATE**Disposal type description:****Disposal location description:** Lea County landfill or Eddy County landfill**Waste type:** CHEMICALS**Waste content description:** After drilling & completions, chemicals, salts, frac sand & other waste material will be removed & disposed of at a state approved disposal facility**Amount of waste:** 2000                  pounds**Waste disposal frequency :** Weekly**Safe containment description:** Chemicals will be stored in frac tanks**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY      **Disposal location ownership:** PRIVATE**Disposal type description:****Disposal location description:** R360, 6601 W Hobbs Hwy, Carlsbad, NM88220**Waste type:** PRODUCED WATER**Waste content description:** Produced water will be hauled to private SWD**Amount of waste:** 1500                  barrels**Waste disposal frequency :** Daily**Safe containment description:** Produced water will be transported via pipeline to battery, and from battery to SWD**Safe containmant attachment:****Waste disposal type:** OTHER**Disposal location ownership:** PRIVATE**Disposal type description:** SWD**Disposal location description:** OWL/Mesquite

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H**Reserve Pit****Reserve Pit being used?** NO**Temporary disposal of produced water into reserve pit?** NO**Reserve pit length (ft.)****Reserve pit width (ft.)****Reserve pit depth (ft.)****Reserve pit volume (cu. yd.)****Is at least 50% of the reserve pit in cut?****Reserve pit liner****Reserve pit liner specifications and installation description****Cuttings Area****Cuttings Area being used?** NO**Are you storing cuttings on location?** Y**Description of cuttings location** Cuttings will be stored in steel haul off bins and taken to an NMOCD approved disposal facility**Cuttings area length (ft.)****Cuttings area width (ft.)****Cuttings area depth (ft.)****Cuttings area volume (cu. yd.)****Is at least 50% of the cuttings area in cut?****WCuttings area liner****Cuttings area liner specifications and installation description****Section 8 - Ancillary****Are you requesting any Ancillary Facilities?:** N**Ancillary Facilities****Comments:****Section 9 - Well Site****Well Site Layout Diagram:**

GhostRider22\_15FedCom602H\_WellsiteLayout\_20231107161704.pdf

GhostRider22\_15FedCom602H\_WellsiteRigLayout\_20231107161711.pdf

**Comments:**

Operator Name: APACHE CORPORATION

Well Name: GHOST RIDER 22 15 FEDERAL COM

Well Number: 602H

## Section 10 - Plans for Surface Reclamation

Type of disturbance: No New Surface Disturbance Multiple Well Pad Name: GHOST RIDER 22 15 FEDERAL COM

Multiple Well Pad Number: PAD 2 SOUTH

### Recontouring

Drainage/Erosion control construction: Slight slope for water drainage

Drainage/Erosion control reclamation: Reclamation is going to follow natural terrain to control erosion, runoff and siltation of surrounding area

Well pad proposed disturbance (acres):	Well pad interim reclamation (acres): 0	Well pad long term disturbance (acres): 0
Road proposed disturbance (acres):	Road interim reclamation (acres): 0	Road long term disturbance (acres): 0
Powerline proposed disturbance (acres):	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres):	Pipeline interim reclamation (acres): 0	Pipeline long term disturbance (acres): 0
Other proposed disturbance (acres):	Other interim reclamation (acres): 0	Other long term disturbance (acres): 0
Total proposed disturbance: 0	Total interim reclamation: 0	Total long term disturbance: 0

Disturbance Comments: Other long term/short term disturbance will be for installation of electrical line approx. 4828.43' in length and 30' wide for construction

Reconstruction method: Areas planned for interim reclamation will be contoured to original contour if feasible, or if not feasible, to an interim contour that blends with surrounding topography as much as possible. Where applicable, fill material of well pad will be back filled into the cut to bring area back to original contour.

Topsoil redistribution: Topsoil that was spread over interim reclamation areas will be stockpiled prior to recontouring. Topsoil will be redistributed evenly over entire disturbed site to ensure successful revegetation

Soil treatment: No soil treatment expected

Existing Vegetation at the well pad: Uniformly distributed grassland of black grama, dropseeds, bluestem, sand sage and shinnery oak. The present plant community consists of shinnery oak, mesquite, broom snakeweed, yucca and desert grasses and forbs. Project area lies on a sandy grassland terrain.

Existing Vegetation at the well pad

Existing Vegetation Community at the road: Uniformly distributed grassland of black grama, dropseeds, bluestem, sand sage and shinnery oak. The present plant community consists of shinnery oak, mesquite, broom snakeweed, yucca and desert grasses and forbs. Project area lies on a sandy grassland terrain.

Existing Vegetation Community at the road

Existing Vegetation Community at the pipeline: Uniformly distributed grassland of black grama, dropseeds, bluestem, sand sage and shinnery oak. The present plant community consists of shinnery oak, mesquite, broom snakeweed, yucca and desert grasses and forbs. Project area lies on a sandy grassland terrain.

Existing Vegetation Community at the pipeline

Existing Vegetation Community at other disturbances: Uniformly distributed grassland of black grama, dropseeds, bluestem, sand sage and shinnery oak. The present plant community consists of shinnery oak, mesquite, broom snakeweed, yucca and desert grasses and forbs. Project area lies on a sandy grassland

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H

terrain.

**Existing Vegetation Community at other disturbances****Non native seed used?** N**Non native seed description:****Seedling transplant description:****Will seedlings be transplanted for this project?** N**Seedling transplant description****Will seed be harvested for use in site reclamation?** N**Seed harvest description:****Seed harvest description attachment:****Seed****Seed Table****Seed Summary****Total pounds/Acre:****Seed Type****Pounds/Acre****Seed reclamation****Operator Contact/Responsible Official****First Name:****Last Name:****Phone:****Email:****Seedbed prep:****Seed BMP:****Seed method:****Existing invasive species?** N**Existing invasive species treatment description:****Existing invasive species treatment****Weed treatment plan description:** Operator will consult with authorized officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.**Weed treatment plan**

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H

**Monitoring plan description:** Interim reclamation, reclaimed areas, will be monitored periodically to ensure vegetation has re-established, that area is not redisturbed, and erosion is controlled

**Monitoring plan**

**Success standards:** Objective of interim reclamation is to restore vegetative cover and a portion of landform sufficient to maintain healthy, biologically active topsoil, control erosion, and minimize habitat and forage loss, visual impact, and weed infestation during life of well or facilities. Long term objective of final reclamation is to return land to a condition similar to what existed prior to disturbance. This includes restoration of landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity. BLM will be notified 3 days prior to commencement of any reclamation procedures. If circumstances allow, interim and/or final reclamation actions will be completed no later than 6 months from when the final well on location has been completed or plugged. We will gain written permission from BLM if more time is needed.

**Pit closure description:** Not applicable

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Disturbance type:** EXISTING ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H**Disturbance type:** WELL PAD**Describe:****Surface Owner:** BUREAU OF LAND MANAGEMENT**Other surface owner description:****BIA Local Office:****BOR Local Office:****COE Local Office:****DOD Local Office:****NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:****Section 12 - Other****Right of Way needed?** N**Use APD as ROW?****ROW Type(s):****ROW****SUPO Additional Information:****Use a previously conducted onsite?** Y**Previous Onsite information:** Onsite for Ghost Rider 22 15 Fed Com Pad 2 South conducted on 12/6/2016 and 9/11/2017 by BLM Rep: Keely Watland.**Other SUPO**

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

## PWD Data Report

05/13/2024

**APD ID:** 10400095263

**Submission Date:** 11/08/2023

**Operator Name:** APACHE CORPORATION

**Well Name:** GHOST RIDER 22 15 FEDERAL COM

**Well Number:** 602H

**Well Type:** OIL WELL

**Well Work Type:** Drill

### Section 1 - General

Would you like to address long-term produced water disposal? NO

### Section 2 - Lined

Would you like to utilize Lined Pit PWD options? N

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Lined pit PWD on or off channel:**

**Lined pit PWD discharge volume (bbl/day):**

**Lined pit**

**Pit liner description:**

**Pit liner manufacturers**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule**

**Lined pit reclamation description:**

**Lined pit reclamation**

**Leak detection system description:**

**Leak detection system**



**Operator Name:** APACHE CORPORATION

**Well Name:** GHOST RIDER 22 15 FEDERAL COM

**Well Number:** 602H

**Lined pit Monitor description:**

**Lined pit Monitor**

**Lined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information**

### Section 3 - Unlined

**Would you like to utilize Unlined Pit PWD options?** N

**Produced Water Disposal (PWD) Location:**

**PWD disturbance (acres):**

**PWD surface owner:**

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule**

**Unlined pit reclamation description:**

**Unlined pit reclamation**

**Unlined pit Monitor description:**

**Unlined pit Monitor**

**Do you propose to put the produced water to beneficial use?**

**Beneficial use user**

**Estimated depth of the shallowest aquifer (feet):**

**Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?**

**TDS lab results:**

**Geologic and hydrologic**

**State**

**Unlined Produced Water Pit Estimated**

**Unlined pit: do you have a reclamation bond for the pit?**

**Operator Name:** APACHE CORPORATION**Well Name:** GHOST RIDER 22 15 FEDERAL COM**Well Number:** 602H**Is the reclamation bond a rider under the BLM bond?****Unlined pit bond number:****Unlined pit bond amount:****Additional bond information****Section 4 -****Would you like to utilize Injection PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Injection PWD discharge volume (bbl/day):****Injection well mineral owner:****Injection well type:****Injection well number:****Injection well name:****Assigned injection well API number?****Injection well API number:****Injection well new surface disturbance (acres):****Minerals protection information:****Mineral protection****Underground Injection Control (UIC) Permit?****UIC Permit****Section 5 - Surface****Would you like to utilize Surface Discharge PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Surface discharge PWD discharge volume (bbl/day):****Surface Discharge NPDES Permit?****Surface Discharge NPDES Permit attachment:****Surface Discharge site facilities information:****Surface discharge site facilities map:****Section 6 -****Would you like to utilize Other PWD options?** N**Produced Water Disposal (PWD) Location:****PWD surface owner:****PWD disturbance (acres):****Other PWD discharge volume (bbl/day):**

**Operator Name:** APACHE CORPORATION

**Well Name:** GHOST RIDER 22 15 FEDERAL COM

**Well Number:** 602H

**Other PWD type description:**

**Other PWD type**

**Have other regulatory requirements been met?**

**Other regulatory requirements**



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

Bond Info Data

05/13/2024

APD ID: 10400095263	Submission Date: 11/08/2023
Operator Name: APACHE CORPORATION	
Well Name: GHOST RIDER 22 15 FEDERAL COM	Well Number: 602H
Well Type: OIL WELL	Well Work Type: Drill

Highlighted data  
reflects the most  
recent changes  
[Show Final Text](#)

Bond

Federal/Indian APD: FED

BLM Bond number: BLM-CO-1463; NMB-000736

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information

**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 Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 346254

CONDITIONS

Operator:  APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID:
	873
	Action Number: 346254
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	6/13/2024
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	6/13/2024
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	6/13/2024
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	6/13/2024
pkautz	If cement does not circulate on any string, a CBL is required for that string of casing	6/13/2024